Hampden County Registry of Deeds

Dams File Collection

Book D18

CITY OF SPRINGFIELD, MASSACHUSETTS

Donald E. Ashe, Register
Hampden County Registry of Deeds,
a Division of the Office of
William Francis Galvin, Secretary of the Commonwealth

TABLE OF CONTENTS ~ CITY OF SPRINGFIELD

Baldwin-Duckworth Chain Corporation Dam

Bassett Dam

Bay State Thread Works Dam

Bay State Plumbing & Heating Supply Company Dam

Rood Dam

Richards Dam

Pratt Dam

Gaimari Dam

Handy Dam

Hogan Lower Dam

Hogan Upper Dam

Howard Company Dam

Ludlow Manufacturing Company Dam

Mill River Dams

Monsanto Chemical Company Dams aka Plastic Park Dams
Fka Fitzgerald Dams

Hogan Dams fka Abbe Reservoir Dams

McDonald Dam

TABLE OF CONTENTS ~ CITY OF SPRINGFIELD

Radnor Dam

Springfield City Park Dams

Forest Park Dams

Sixteen Acres Pond Dam aka Barney & Berry Skate Company Dam

Van Horn Park Dams

Springfield Welding Company Dam

Storms Drop Forging Company Dam

Water Shops Dam aka Springfield Armory Dam

Western Massachusetts Electric Company—Indian Orchard—Dam

Baldwin-Duckworth Chain Corporation Dam

1926 Springfield

Located on Mill River.

City/Town	Springfield
Dam	Baldwin-Duckworth Chain Corporation Dam
Name	Baldwin-Duckworth Chain Corporation
Name	Duckworth Chain Manufacturing Company
Water	Mill River

Duckworth Chain Mfg. Co.,
Springfield, Mass.

you are notified that your dam, located on Mill River so called in the City of Springfield, etc.

"This is a wooden spillway structure forty-nine feet in length and twelve feet in height backed upstream with earth and silt. The structure is an old one and requires repairing from time to time. According to the company, it is kept under close inspection, and was overhauled and thoroughly repaired about six years ago. It requires some repairing, at present, which, the company stated, would be made next summer in low water."

March 24, 1926

Duckworth Chain Mfg. Co.,
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Mill River so-called in the City of Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "This is a wooden spillway structure forty-nine feet in length and twelve feet in height backed upstream with earth and silt. The structure is an old one and requires repairing from time to time. According to the company, it is kept under close inspection, and was overhauled and thoroughly repaired about six years ago. It requires some repairing, at present, which, the company stated, would be made next summer in low water."

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

FACTORIES
Springfield Mass.
Worcester Mass.

BALDWIN-DUCKWORTH
CHAIN CORPORATION

Power Transmission Chains and Sprockets
SPRINGFIELD MASSACHUSETTS U. S. A.

May 6th., 1933

Office of the County Commissioners,
County of Hampden,
Springfield , Mass.

Gentlemen:

We have your report of May 3rd. concerning our dam on Mill River at Mill Street and Ft. Pleasant Avenue. Our plan in this matter is as follows:

As this dam is in very poor condition and since we are not at the present time using the water wheels, we have decided to tear down a portion of the dam in order to let the water flow its normal course without being held back by a dam.

We are awaiting an opportunity when the water is low, to do this, which we hope can be accomplished sometime during the month of June.

If there is any objection to this procedure, please advise.

Very truly yours,

BALDWIN-DUCKWORTH CHAIN CORP.

C. E. Johnson

Superintendent

C.E.Johnson
ES

May 3, 1933

Baldwin-Duckworth Chain & Mfg. Co.,
369 Plainfield Street,
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 46 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Mill River in the City of Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"The dam is not in good condition and needs repairs, especially in the planking around the well of the sluice gate, where there is considerable leakage. The crest timber of the dam has been torn off for about two-thirds of its length and some of the top planking of the deck is loose. A new crest timber should be placed on the dam and the loose planking made secure and tight."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable length of time.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

November 3, 1937

Baldwin-Duckworth Chain Manufacturing Corp.
369 Plainfield Street
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your dam on Mill River in Springfield has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

> "This dam is an old wooden crib structure, which has been abandoned for some time. It backs up no water as a part of the structure has been washed away, and the remainder is gradually disintegrating under the action of the stream flow, ice etc. Consequently there is a possibility of damage being done to property downstream by some of the timbers from the derelict floating away especially in high water. It is, therefore, recommended that, since the structure is abandoned for good, the owner be requested to take down and remove the remainder of the structure from the stream bed, or at least, the loose heavy timbers which would be most likely to cause damage."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Baldwin-Duckworth Chain Corp.
369 Plainfield St.
Springfield, Mass.

August 27, 1941

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your dam on Mill River in Springfield has been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"This timber structure has not been in use for some years, and gradual disintegration and attrition have reduced it to about one-third of its original height. The portion now remaining consists only of the foundation timbers, extending to a height of about 3 feet above the streambed. This remaining portion of the dam should be removed, as it is a source of danger to other structures below because of the possibility of heavy timbers being worked loose and carried downstream in times of flood."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Bassett Dam

- **Springfield**

Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Bassett Dam

SPRINGFIELD
D18002

BASSETT DAM

D18002

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Bay State Thread Works Dam

1941 Springfield

Located on Mill River.

City/Town	Springfield
Dam	Bay State Thread Works Dam
Name	Bay State Thread Works
Water	Mill River

Bay State Thread Works
15 Mill St.
Springfield, Mass.

August 27,1941

Gentlemen:

In accordance with the provisions of Chapter 253, Section 48 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your dam on Mill River in Springfield has been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Part of the toe of this concrete dam has been removed, apparently at the time of the construction of the new concrete wall, built downstream from the dam, in connection with the diversion of the stream at a point a short distance below the dam. This part removed should be replaced so that the dam will be restored to its original section. Also, the spalling and erosion of the concrete on the downstream face of the dam should be repaired.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Baystate Plumbing & Heating Supply Company Dam

1960 Springfield

Located on Mill River.

City/Town	Springfield
Dam	Baystate Plumbing & Heating Supply Company Dam
Name	Baystate Plumbing & Heating Supply Company
Water	Mill River

January 6, 1960

Bay State Plumbing & Heating Supply Co.,
15 Mill Street
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located in the rear of your property on Mill River has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "The drawdown gate at this dam apparently still is not functioning properly. The position of the stem shows that the gate should be wide open but no water was found flowing thru the dam in the drawdown opening. This condition has been reported in the past and it should be investigated and corrective action taken. If the gate is plugged, the debris plugging the opening should be removed. If the gate is broken or disconnected from the gate stem, proper repairs should be made.
>
> The left abutment area still remains washed to the south of the abutment masonry. This condition should be repaired.
>
> The access walk on the top of the dam leading to the gate-operating structure should be replaced. Much debris was noted ponded at the dam in the vicinity of the draw-down facility."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

Rood Dam

1926 Springfield

Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Rood Dam
Name	Rood, Charles D

November 17, 1926

Mr. Charles D. Rood,
31 Elm Street,
Springfield, Mass.

Dear Sir:

Inasmuch as your dam was inspected quite recently by our Engineer who found that no repairs had been made thereon, your attention is called to the notice sent to you on February 24, 1926 of which a copy is herewith enclosed.

In case you would like further information regarding the repairs required than that contained in notice, should you communicate or call upon our Engineer, James L. Tighe of the firm of Tighe & Bond, 189 High St., Holyoke, Mass., he will be glad to advise you.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

C/N
Enc.

Richards Dam

1926 Springfield

Located on Mill River.

City/Town	Springfield
Dam	Richards Dam
Name	Richards, Fred J
Water	Mill River

Page 60 of report.

Fred J. Richards
121 South Park Avenue,
Longmeadow, Mass.

You are notified that your dam, located on Mill River as called in the City of Springfield, is

"It is not in very good condition as there is settlement in the crest caused apparently by the decaying timber underneath.

The pond, however, formed by the structure, is very small, and in case of failure no material damage would be done by released water. Besides, the structure is in such close proximity to the Connecticut River. If the dam, however, is to be kept in service, it will be to the interest of the owner to have it thoroughly overhauled and repaired as soon as possible."

March 24, 1926

Mr. Fred J. Richards
121 South Park Avenue,
Longmeadow, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Mill River so-called in the City of Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

"It is not in very good condition as there is settlement in the crest caused apparently by the decaying timber underneath.

The pond, however, formed by the structure, is very small, and in case of failure no material damage would be done by released water. Besides, the structure is in such close proximity to the Connecticut River. If the dam, however, is to be kept in service, it will be to the interest of the owner to have it thoroughly overhauled and repaired as soon as possible."

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

Pratt Dam

1933 Springfield

Dam located on North Branch of Mill River.

City/Town	Springfield
Dam	Pratt Dam
Name	Pratt, George D
Water	Mill River

May 3, 1933

Mr. George D. Pratt,
120 Maple Street,
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on the North Branch of Mill River in the City of Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"The north abutment of this dam is cracked and worn and should be repaired. The wood spillway apron is also in need of repairs, and new stop planks should be substituted for those now in use."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

_____

_____

Gaimari Dam

1926 Springfield

Located on small tributary to Mill River. Owned by Peter J. Gaimari formerly by Antonio Gaimari.

City/Town	Springfield
Dam	Gaimari Dam
Name	Gaimari, Peter J.
Name	Gaimari, Antonio
Water	Mill River

Page 62 of report

Antonio Gionari,
11 Williams St.,
Springfield, Mass.

you are notified that your ice pond dam, located on a small tributary to Mill River ~~so called~~ in the City of Springfield, etc.

"The overflow is a well located in the pond from which a pipe or culvert extends through the dam below the ice. The end of this culvert is falling in and should be repaired and cleaned out."

Now, therefore, etc.

February 24, 1926

Mr. Antonio Gimari,
11 Williams Street,
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your ice pond dam, located on a small tributary to Mill River, so-called, in the City of Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "The overflow is a well located in the pond from which a pipe or culvert extends through the dam below its toe. The end of this culvert is falling in and should be repaired and cleaned out."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable time.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

May 10, 1933

Mr. Antonio Gaimari,
11 William Street,
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on a tributary of Mill River in the City of Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"The pond has been drawn down and the brook now passes through the drain culvert in the base of the dam. It is recommended that the earth debris, etc. be cleaned away from both ends of this culvert and that the culvert be kept clear and unobstructed at all times."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

_____

_____

December 10, 1952

Mr. Peter J. Gainari
27 Ivanhoe Street
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your abandoned dam located just southerly of your home has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

> "Little or no pond is now formed by this dam, however, debris is blocking the outlet pipe or channel. This debris should be removed and a clear waterway provided to prevent the formation of a large body of water behind the dam should the outlet not be able to carry away heavy storm flows."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Farmers Dam

December 16, 1953

Mr. Peter J. Gainari
27 Ivanhoe Street
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your abandoned dam located just southerly of your home has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"Adequate drainage of surface water through the dam is not now provided. Drainage should be improved by the removal of debris and the clearing of the pipe line or water carrying structure through the dam. Precaution should be taken to prevent the formation of a large body of water behind the dam."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Handy Dam

1926 Springfield

Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Handy Dam
Name	Handy, H L

November 17, 1926

Mr. H. L. Handy,
153 Princeton Street,
Springfield, Mass.

Dear Sir:

Inasmuch as your dam was inspected quite recently by our Engineer who found that no repairs had been made thereon, your attention is called to the notice sent to you on March 10, 1926 of which a copy is herewith enclosed.

In case you would like further information regarding the repairs required than that contained in notice, should you communicate or call upon our Engineer, James L. Tighe of the firm of Tighe & Bond, 189 High St., Holyoke, Mass., he will be glad to advise you.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

C/N
Enc.

Hogan Lower Dam

- Springfield

Also see: Dam Report Section - Springfield.

Dam	Hogan Lower Dam
Streets	Springfield

SPRINGFIELD
D18010

HOGAN LOWER DAM

D18010

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Hogan Upper Dam

- Springfield

Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Hogan Upper Dam

SPRINGFIELD
D18011

HOGAN UPPER DAM

D18011

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Howard Company Dam aka Mill River Dam

1926 Springfield

Also see: Dam Report Section - Springfield. See also: " Mill River Dam" - D18014.

City/Town	Springfield
Dam	Howard Company Dam
Dam	Mill River Dam
Name	James L. Howard & Company Railway Supplies
Name	Howard, James L

ESTABLISHED 1841

INCORPORATED 1876

CHARLES P. HOWARD, President.
EDWARD B. BENNETT, Vice-President.
FRANK E. HOWARD,
Secretary and Treasurer.

JAMES L. HOWARD & CO.

RAILWAY SUPPLIES.

HARTFORD, CONN., Feb. 26, 1926

County Commissioners,
County of Hampden,
Springfield, Mass.

Gentlemen,-

Your letter of February 24th ordering us to repair end of abutment on our dam in Springfield is received and we will attend to this in the near future.

Yours truly,

James L. Howard & Co.

FEH:R

Ludlow Manufacturing Company Dam

- **Springfield**

Located on the Chicopee River. Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Ludlow Manufacturing Company Dam
Name	Ludlow Manufacturing Company
Water	Chicopee River

SPRINGFIELD
D18013

LUDLOW MANUFACTURING COMPANY DAM

D18013

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Mill River Dams

1926 Springfield

Mill River Dams fka 'Howard Company Dam' or 'Springfield Waste Company Dam'. Located rear of 109 Mill Street. Also see: Dam Report Section - Springfield. See also: "Howard Company Dam" - D18012.

City/Town	Springfield
Dam	Watershops Pond Dam
Dam	Mill River Dams
Name	James L. Howard & Company Railway Supplies
Name	Baystate Plumbing & Heating
Name	Howard, George E
Name	Brown, Robert W
Name	Springfield Waste Company
Name	Union Narrow Fabric Company
Streets	Mill Street (rear #109)
Water	Watershops Pond
Water	Mill River

Springfield Waste Company,
Springfield, Mass.

you are notified that your dam, located on Mill River so called in the City of Springfield, etc.

"At the south end abutment of the dam, the ledge seems to drop off a few feet, downstream from the toe of the spillway. At this point, there is some erosion of the embankment at the end of the abutment. This erosion should be stopped by extending the abutment or by a heavy stone rip-rap. With this exception, the dam is in good condition."

Now, therefore, etc.

Mr. Howard tel. 7/25/26. In connection with the Miel River Dam Mr. Howard said that the James L. Howard & Co., of Hartford, Conn. owns the property & that the Topped Waste Co. rents from them. He will forward the letter to them.

January 9, 1956

Hampden County Commissioners
Springfield, Massachusetts

Gentlemen:

On account of a family connection I am making a study of the Mill River, which is located in Springfield, Massachusetts.

From what I have been able to learn, this river rises in the Wilbraham area and empties into the Connecticut River. I am told that there is an army operation on this stream and that a dam is maintained by the government which forms the Water Shops Pond.

In New Hampshire we have a state government agency which is in control of rivers and dams and it issues a periodic report showing CFS, location and elevation of dam sites and other pertinent information.

I understand that this function is performed by the County Commissioners in Massachusetts.

I would appreciate receiving a copy of any report or other information you can give me on this subject.

Very truly yours,

Robert W. Brown

RWB:ald

3 CAMBRIDGE STREET
CONCORD, N. H.

January 10,1956

George H. McDonnell, Esq.,
County Hydraulic Engineer,
189 High Street,
Holyoke, Mass.

Dear Mr. McDonnell:

I am enclosing a copy of a letter dated January 9, 1956 from one, Robert W. Brown, 3 Cambridge Street, Concord, New Hampshire.

Would you be so kind as to comply with any requested information in this letter.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

By _____
Counsel.

WJF/N
Encl.

C-D Gen.

January 17, 1956

COPY

Mr. Robert W. Brown
3 Cambridge Street
Concord, N. H.

Dear Sir:

The County Commissioners of Hampden County, Massachusetts, have turned over your letter of January 9th, 1956, to me for action.

Mill River in Springfield is formed by two branches, that is the South Branch of Mill River and the North Branch of Mill River. In general, both branches rise in the Wilbraham area. However, a portion of the feeder streams to the South Branch of Mill River rise in Hampden. The two branches of Mill River flow into Watershops Pond. This pond formed by the dam is owned by the United States Government in connection with the Springfield Armory. The main Mill River leaves Watershops Pond and flows westerly through Springfield into the Connecticut River.

In regard to reports issued periodically on all streams and dams in the County, no such general report is prepared nor required in accordance with the Law.

The function of the County Commissioners in Massachusetts in regard to dams is outlined in Chapter 352 of the General Laws. A copy of the pertinent sections of this chapter is included herewith for your information.

If you have any particular information that you desire on any special dam or pond, the undersigned would be pleased to provide you with the information if it is available and on file.

Please do not hesitate to write the undersigned if I can be of any further help to you.

Very truly yours,

GHM/emm

COPY

George H. McDonnell
County Hydraulic Engineer

C-D Gen.

January 17, 1956

COPY

Mr. Robert W. Brown
3 Cambridge Street
Concord, N. H.

Dear Sir:

The County Commissioners of Hampden County, Massachusetts, have turned over your letter of January 9th, 1956, to me for action.

Mill River in Springfield is formed by two branches, that is the South Branch of Mill River and the North Branch of Mill River. In general, both branches rise in the Wilbraham area. However, a portion of the feeder streams to the South Branch of Mill River rise in Hampden. The two branches of Mill River flow into Watershops Pond. This pond formed by the dam is owned by the United States Government in connection with the Springfield Armory. The main Mill River leaves Watershops Pond and flows westerly through Springfield into the Connecticut River.

In regard to reports issued periodically on all streams and dams in the County, no such general report is prepared nor required in accordance with the Law.

The function of the County Commissioners in Massachusetts in regard to dams is outlined in Chapter 352 of the General Laws. A copy of the pertinent sections of this chapter is included herewith for your information.

If you have any particular information that you desire on any special dam or pond, the undersigned would be pleased to provide you with the information if it is available and on file.

Please do not hesitate to write the undersigned if I can be of any further help to you.

Very truly yours,

GHM/emm

COPY

George H. McDonnell
County Hydraulic Engineer

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND, INC.
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS
GEORGE H. MCDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

C-D Gen

January 17, 1956

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Gentlemen:

Enclosed for your information and file purposes is a copy of a letter sent to Mr. Robert W. Brown of #3 Cambridge Street, Concord, N. H., in answer to his letter of January 9th requesting information on General Reports having to do with streams and dams in Hampden County.

The enclosed letter is self-explanatory.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/emm
enc.

copy of this letter sent to
George H. McDonnell, County Hydraulic
Engineer, on
April 25, 1957

ERNEST F. CARLSON, Inc.

GENERAL CONTRACTORS

BUILDING TRADES EMPLOYERS' ASS'N. INC. SPRINGFIELD MASS. BT EA

MEMBER

1694 MAIN STREET
SPRINGFIELD 3, MASS.

April 23, 1957

James L. Howard & Company
438 Asylum Street
Hartford, Connecticut

Re: Springfield Waste Co.
109 Mill Street
Springfield, Mass.

Gentlemen:

At the request of Mr. George E. Howard, President of the Springfield Waste Co., the writer made a survey of the dam located at the rear of 109 Mill Street, Springfield, Massachusetts. This survey was conducted as a result of a letter sent to the Springfield Waste Company by the Board of County Commissioners.

This examination was done Friday, April 19, 1957, at which time the pond was emptied, enabling a thorough survey of said dam. The following work was decided upon as necessary:

1. Repair the reinforced concrete apron at the bottom of the dam.

2. Miscellaneous repointing and grouting.

3. Backfill and tamp under concrete abutment, south wing.

Further, it was resolved that an estimate be prepared for a new cat-walk and splash-boards. The aforementioned work is scheduled for the tentative July shutdown.

We are forwarding a copy of this letter to the Springfield Waste Company and to the Hampden County Board of Commissioners.

Very truly yours,

ERNEST F. CARLSON, Inc.

By: G. S. Jones
G. S. Jones
General Manager

GSJ:hb

cc: Springfield Waste Company
Hampden County Board of Commissioners

JAMES L. HOWARD & COMPANY
ESTABLISHED 1841
RAILWAY CAR HARDWARE

438 ASYLUM STREET
HARTFORD 1, CONN.

March 23, 1957.

Board of County Commissioners
County of Hampden
Springfield, Mass.

Gentlemen:

Yours March 13th is received and we thank you for calling our attention to this dam. We will take up this repair matter with our contractor and expect to have the work done this summer.

Very truly yours,

James L. Howard & Co.

F.E. Howard
B

Letter to
Springfield Waste Company - they forwarded it to
James L. Howard & Company, 438 Asylum St., Hartford, Conn.

Dam on MillRiver at the rear of industrial property in Springfield.

FEH:B

Copy of this letter mailed to George H. McDonnell,
County Hydraulic Engineer, on March 25, 1957.

Established 1861

Springfield Waste Company

Office, Mill Street

Springfield, Mass.

Address all communications to the company and refer to these initials GEH/vb

March 14, 1957

Board Of County Commissioners
37 Elm St.,
Springfield, Mass.

Gentlemen:

We are in receipt of your letter of March 13 and have forwarded same to the James L. Howard & Company 438 Asylum Street, Hartford, Conn., who are the owners of the property.

Yours very truly,

SPRINGFIELD WASTE COMPANY

Geo. E. Howard

George E. Howard,
President

Copy of this letter sent to George H. McDonnell, County Hydraulic Engineer, on March 15, 1957.

Dam is on Mill River at the rear of industrial property in Springfield.

ALL QUOTATIONS AND ORDERS ARE SUBJECT TO CAUSES BEYOND OUR CONTROL

March 13, 1957

Springfield Waste Co.
109 Mill Street
Springfield, Mass.

Gentlemen:

In accordance with Chapter 253 of the General Laws of the Commonwealth of Masaachusetts, your dam on Mill River at the rear of your industrial property in Springfield, has been inspected by the County Hydraulic Engineer, and the conditions noted at this dam were reported as follows.

> "The concrete apron at the toe of the dam near the left side has been eroded considerably and should be repaired. The stone masonry at the left abutment is in need of maintenance and repair. This necessary maintenance should be considered for completion in 1957 and the owner of the dam should be advised on this matter."

Based upon the advice of the County Hydraulic Engineer, it is recommended that the condition as noted at your dam be investigated and the necessary steps to repair the dam and abutment should be taken in the near future.

If you desire any further information on this matter, please do not hesitate to call upon us.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

C.D. Springfield

Feb. 5, 1958

James Sullivan, Supt.
Dept. of Streets and Engineering
City Hall
Springfield, Mass.

Dear Sir:

I recently made an inspection of various dams on Mill River and noted that upstream of the dam of the Union Narrow Fabric Co. there is some evidence of the south bank of the stream being washed by action of the water current in the old pond bottom. The gate at this dam has been open for some time and the Mill River now flows thru the pond basin with little or no storage taking place.

It is possible that the material being washed from the left bank consists only of silt and mud deposits laid down during periods of time when water was ponded by the dam. There is evidence upstream and downstream from the area being washed that there is a ledge in the natural bank of Mill River. Consequently, the garage buildings on the edge of the bank are probably supported on ledge proper.

I do not know whether your Department exercises any control over this stream and the conditions therein. I thought I would pass the above information along to you for whatever it may be worth in case you do carry on any maintenance work in the bed of Mill River.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Dec. 3, 1958

Springfield Waste Co.
109 Mill Street
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dam located in the rear of your property on Mill River has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "The stone masonry at the left abutment should be checked for undermining and movement. Any needed repairs and maintenance should be done as soon as possible to prevent failure of the stones that are undermined. The masonry work needed at the left toe of the dam should be done this coming year. This condition has been reported previously."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Dec. 3, 1958

Bay State Plumbing & Heating Supply Co.
15 Mill Street
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dam located in the rear of your property on Mill River has been recently inspected by our Engineer and your attention is called to the following condition noted and recommendations made by him.

> "The drawdown gate is not functioning properly. The stem is in the wide open position but no water flows thru the conduit in the dam. This condition should be investigated and if the gate is plugged, the debris plugging the opening should be removed. If the gate is broken, it should be repaired. In all probability, the gate stem or gate itself has been broken. The left abutment area has been washed to some extent behind the abutment wall, and this condition should be repaired. The access walk on top of the dam leading to the gate structure should be replaced. This walk has been washed away."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

CD Springfield
Jan. 14, 1959

Cellite Engineers, Inc.,
42 Hampden Street
Springfield, Mass.

Att: Edward W. Betterly

Gentlemen:

Reference is made to your letter of Jan. 10, 1959, sent to the County Commissioners of Hampden County. Your letter has been turned over to the undersigned, County Hydraulic Engineer for Hampden County.

On March 13, 1957, a letter was sent to the Springfield Waste Company by the County Commissioners and the following was pointed out:

> "The concrete apron at the toe of the dam at the left side has been eroded considerably and should be repaired. The stone masonry at the left abutment is in need of maintenance and repair. This necessary maintenance should be considered for completion in 1957."

Further inspections at the dam indicate that the work as advised has not been carried out. The work should be done during 1959.

The work is of a nature that can best be done in warm weather and following the Spring runoff. I suggest that you plan to do the necessary maintenance and repairs early in the coming Summer and that if you have any questions in connection with the work necessary, the undersigned will be pleased to meet with you or your representative, at the site of the dam, to point out the needed work. It is rather difficult to see the work that is required when flow over the dam is at a moderate to heavy rate.

If you did care to discuss this matter now, I will be pleased to meet with you, at your office, in the immediate future. Otherwise, I will plan to get in touch with you following the Spring runoff to discuss the necessary work.

If you have any questions, kindly write or call me at this address.

Very truly yours

George H. McDonnell
County Hydraulic Engineer

GHM/cmb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

Rec'd
Jan. 15, 1959

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
January 14, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Enclosed herewith, please find a copy of a communication sent to Mr. Edward W. Betterly of the Cellite Engineers, Inc., pertaining to his letter to your Board of January 10, 1959. The contents of my letter are self-explanatory. I thought perhaps you would want a copy of my letter for file purposes.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Enc.

I am submitting the above information to you for file purposes should any question be raised about the request of Mr. Bramer for information on the dam at Watershop Pond.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mbf

Monsanto Chemical Company Dams aka Plastic Park Dams fka Fitzgerald Dams

1926 Springfield

Dam located on Bircham Bend (or Bind) Brook and second dam is located northwesterly of Berkshire Avenue.

City/Town	Springfield
Dam	Plastics Park Dams
Dam	Monsanto Chemical Company Dams
Dam	Fitzgerald Dams
Name	Fitzgerald, Edward
Name	Monsanto Chemical Company
Name	Fitzgerald Company - Ice Dealer
Name	Fitzgerald, Arol J.
Streets	Berkshire Avenue
Water	Bircham Bend Brook
Water	Bind Brook

Edward Fitzgerald,
Indian Orchard, Mass.

you are notified that your upper dam, located on Birchem Bend Brook so called in the City of Springfield, etc.

"The structure which forms a pond six acres in area, shows some seepage along its toe which the owner stated he would have repaired the coming summer."

Very truly yours, etc.

February 24, 1926

Mr. Edward Fitzgerald,
Indian Orchard, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your upper dam, located on Bircham Bend Brook, so-called, in the City of Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "The structure which forms a pond six acres in area, shows some seepage along its toe which the owner stated he would have repaired the coming summer."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable time.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

May 3, 1933

Mr. Edward Fitzgerald,
Indian Orchard, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your upper dam, located on Birchem Bend Brook, so called, in the City of Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"Although the dam was repaired a few years ago, there is still some leakage showing along the toe toward the north end, which should be stopped. There are fish screens on the overflow which interfere with its discharging capacity. These screens should be removed and whatever screening is necessary should be arranged so as not to interfere with the efficiency of the overflow."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable length of time.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

The Fitzgerald Company

DEALERS IN

ICE

Indian Orchard, Mass., May 10 1913.

County Commissioners,
Springfield, Mass.

Gentlemen:- Yours of May 4th in regards to repairs of upper dam on Buchanan Bend brook received - and will be taken care of in a short time.

Respectfully yours

Edward Fitzgerald.

September 2, 1942

Mr. Edward Fitzgerald

Indian Orchard, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your two dams on Bircham Bend Brook in Springfield have been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him:

> "At the lower dam, the approach to the overflow is partially obstructed by a heavy growth of weeds and brush which should be removed."
> "At the upper dam, repairs are needed at the upstream end of the northerly overflow channel wall, where the wall has been weakened by erosion of the concrete at the water level."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____ Chairman

_____

_____

December 10, 1952

Mr. Arol J. Fitzgerald
564 Page Blvd.
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at Bircham Bend Ponds just upstream from Worcester Street has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"The concrete of the spillway side wall is badly disintegrated and should be properly repaired in 1953."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Fitzgerald's Lower Dam

December 16, 1953

Mr. Arol J. Fitzgerald
564 Page Boulevard
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at Bircham Bend Pond just upstream from Worcester Street has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"This dam is in the same condition as last year. The concrete of the spillway walls is badly disintegrated and should be repaired. Just downstream of the dam a narrow roadway has been constructed over the stream and this road is carried over the stream on a culvert structure. The headroom in this structure is very small and under certain conditions the opening could become easily blocked by debris and the structure could act as a dam to pond water. An increase in the vertical height of the opening by the lowering of the stream bed and cleaning of the stream bed as well as the removal of any debris between the structure and the dam would be advisable."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

November 24, 1954

Monsanto Chemical Co.
812 Monsanto Avenue
Indian Orchard, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the dams now owned by your organization and situated to the south of your plant and northwesterly of Berkshire Avenue, and also known as the Bircham Bend Pond Dams, have been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

Dam near Bircham Bend. - "This dam was formerly owned by Fitzgerald and now it appears to be the property of the Monsanto Chemical Company. Recently some work of repairing the spillway channel has been completed. Downstream of the crest of the spillway the side walls of the spillway flume have been undercut by water action and should be repaired with concrete or masonry. The end of the spillway channel also requires maintenance and repair."

Dam Northwesterly of Berkshire Ave. -"This dam was formerly owned by Fitzgerald also. Apparently it now belongs to the Monsanto Chemical Company. The dam should be cleared of all brush and scrub growth."

Any further information concerning the above which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____Chairman

_____

_____

March 13, 1957

Monsanto Chemical Co.
812 Monsanto Ave.
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253 of the General Laws of the Commonwealth of Massachusetts, your dams located in Springfield in the vicinity of your plant and formerly the property of Fitzgerald, have been inspected by the County Hydraulic Engineer.

The dams in question are two in number, the first being known formerly as the Upper Fitzgerald Dam, located just south of the B&A Railroad tracks leading to Indian Orchard. The second dam forms Birchem Bend Ponds and is located southerly of Worcester St. and downstream of the first dam. A portion of the report of the County Hydraulic Engineer in connection with the first or upper dam is as follows.

> "When last inspected, it was noted that brush was being cut down from the face of the earth embankment. This project should continue and all brush should be removed from the face of the embankment. Floating wood and debris in the pond and the spillway chute could partially plug the spillway chute and reduce its capacity. This debris should be removed from the pond and the spillway channel itself. On the downstream face of the embankment at the right end of the dam, a sunken spot was noted and investigated. This area is directly over a pipeline passing thru the dam and failure of the embankment is apparently directly related to the failure of this pipeline or the opening of pipeline joints. This pipeline should be excavatedand the pipeline repaired. The earth embankment should be repaired by replacing the earth material and properly compacting this replaced material. This work is necessary for the safety of the dam and the owner should be required to carry on this work as soon as possible."

The work as recommended by the County Hydraulic Engineer at this upper dam should be taken care of as soon as possible. In excavating for the repair of the failure over the pipe at the right side of the dam, the excavation work should be done cautiously

and the excavation should be properly shored to be certain that no failure of the dam occurs because of weakening of the embankment due to excessive excavation. It would be advisable to draw down the level of the pond during the time that excavation work is being carried on to repair this pipeline and the earth embankment of the dam itself.

In regard to the lower dam, the following is quoted from the report of the County Hydraulic Engineer.

> "When last inspected, it was noted that improvements were being made to the spillway channel and that new sidewalls were being constructed within the channel itself, thus narrowing the spillway. The work is not entirely completed, and the repairs should continue until the spillway channel is made safe. Consideration should be given by the owner to the construction of a secondary spillway, probably of the swale type, to supplement the spillway capacity at the dam."

If you desire any further information on the above matter in connection with either of these two dams, please do not hesitate to call upon us.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Feb. 5, 1958

Monsanto Chemical Co.
812 Monsanto Avenue
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dams located in the vicinity of your plant and formerly the property of Fitzgerald, have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Monsanto Chemical Co. Upper Dam

This dam has been repaired during the past year. The earth section has been enlarged and improved. The brush has been removed from the face of the dam. A chain link type of fence has been constructed around the property adjoining the pond. In constructing this fence the dam has been included within the enclosure. In crossing the spillway, the fence has been extended down into the spillway to prevent persons from walking under the fence and into the enclosure. The placing of the fence into and across the spillway channel will result in blocking the channel by the collection of leaves, brush, and miscellaneous debris. Thus, the fence as now existing endangers the dam and should be removed from inside of the spillway. There should be no object blocking the flow of water at the spillway. The owner should alter the fence design if it is the desire to keep persons from entering the enclosure. This could be done in many ways, one of which would be to move the fence sufficiently far downstream of the dam so that the dam and spillway can function properly.

Monsanto Chemical Co. Lower Dam

This is the earth dam that forms Bircham Bend ponds. The dam is in good condition. Repairs that were being carried on a year ago within the spillway channel have been completed and the spillway is now in excellent condition. Consideration should be given by the owner however, to the

construction of a secondary spillway, probably of the swale type, to supplement the spillway capacity at your dam."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

_____

_____

_____

Dec. 3, 1958

Monsanto Chemical Co.
812 Monsanto Avenue
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dams located in the vicinity of your plant and formerly the property of Fitzgerald, have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "Monsanto Chemical Co. Upper Dam The woven wire fence reported last year is still in place across the spillway. This condition should be corrected as soon as possible to protect the dam. Leaves and debris now against the fish screen that is still in place and against the fence itself cause water to stand about 12" above the crest of the spillway. The owner of this dam and fence should again be notified of the dangerous conditions resulting from the fence as it now exists and the owner should be directed to remove the fence from the spillway.
>
> Monsanto Chemical Co. Lower Dam The spillway at this dam is satisfactory. It would be well to construct an auxiliary spillway as previously recommended to care for extreme flood flows. The brush and trees now growing on the earth embankment of the dam should be cut down and removed."

Your attention is called to the fact that the dangerous condition of the fence in the spillway was pointed out in our communication of Feb. 5, 1958. The continued existence of this fence could contribute to the loss of the dam and the release of the stored water. Such a failure of the dam could destroy lives and property downstream.

It is directed that action be taken to correct the condition now existing with the fence blocking the spillway.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

January 6, 1960

Monsanto Chemical Co.,
812 Monsanto Avenue
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of dams of Hampden County, you are hereby advised that your dams, located in the vicinity of your plant and formerly the property of Fitzgerald, have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Monsanto Chemical Co. Upper Dam

The embankment of this dam was found to be in satisfactory condition. The spillway itself was in good condition except that the chain link fence previously reported is still in the spillway and results in a dangerous condition, should the fence become blocked with debris in time of flood flow. The chain link fence should be removed from the spillway channel and no obstruction of any sort should be allowed in this structure.

At the time of the last inspection, the pond was found to be empty. The drawdown facility was open and the flow of the brook passed thru the dam."

"Monsanto Chemical Co. Lower Dam

The embankment of this dam was found to be in satisfactory condition. The dam will undoubtedly require brushing in 1960. The masonry spillway chute was found to be in very good condition."

The dangerous condition that exists at the Upper Dam wherein a chain link fence blocks the spillway overflow channel, has been reported to you on two previous occasions. Once in a communication of Feb. 5, 1958, and again in a communication Dec. 3, 1958. At the time of the last inspection by the County

Hydraulic Engineer, the chain link fence had not been removed from the spillway. The fence as it now exists in the spillway chute could be the cause of the failure of Upper Dam and the loss of lives, as well as the destruction of property downstream.

It is directed that action be taken to correct the condition now existing with the fence blocking the spillway. Please notify this Board, in writing, by January 29, 1960, of what action has been taken to eliminate this condition at Upper Dam.

Any further information concerning this letter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

MONSANTO CHEMICAL COMPANY

PLASTICS DIVISION
SPRINGFIELD 2, MASSACHUSETTS

January 11, 1960

County Commissioners
County of Hampden
37 Elm Street
Springfield, Massachusetts

Gentlemen:

This is to acknowledge receipt of your letter dated January 6.

The letter has been referred to our General Superintendent, and I am sure you will hear from him prior to the end of the month as you request.

Very truly yours,

MONSANTO CHEMICAL COMPANY

H. F. Lyman Jr.

H. F. Lyman, Jr.
Attorney

/mp

copy of this letter sent to George H. McDonnell, County Hydraulic Engineer, on January 15, 1960.

MONSANTO CHEMICAL COMPANY

PLASTICS DIVISION
SPRINGFIELD 2, MASSACHUSETTS

January 26, 1960

County Commissioners
County of Hampden
37 Elm Street
Springfield, Massachusetts

Gentlemen:

This is to advise you of our intended action regarding the instruction contained in your letter of January 6 with respect to our Upper Dam.

As a result of your previous communication on the same subject, we did alter the fence, to which you object, by cutting an appreciable amount off the bottom. We had hoped this would satisfy your requirements.

We will now prepare a design for modifying the fence which should not obstruct the spillway. A sketch of such a design will be mailed to your office prior to February 15.

Very truly yours,

MONSANTO CHEMICAL COMPANY
PLASTICS DIVISION

C W Gardner

C. W. Gardner
Maintenance Supt.,
Plant Services

/mw

copy of this letter sent to George H. McDonnell, County Hydraulic Engineer on Jan. 29, 1960.

MONSANTO CHEMICAL COMPANY

PLASTICS DIVISION
SPRINGFIELD 2, MASSACHUSETTS

February 1, 1960

County Commissioners
County of Hampden
37 Court Street
Springfield, Massachusetts

Gentlemen:

Enclosed is a design for further modification to the fence at the Upper Dam spillway at Plastics Park.

By hinging the lower section, so that it swings freely at a level 26" above the spillway floor, we believe the possibility of obstruction to the water flow is effectively eliminated. At the same time, some measure of security is retained at that point. Alternate modifications both up and down stream have been abandoned inasmuch as the one setsup a water hazard for children frequenting the Park, and the other would require using land not belonging to Monsanto. Furthermore, we believe that the design of the drawdown device at this dam affords sufficient control of the water level in the pond, that the hazard you describe is minimized.

We would be glad to meet with your engineer and inspect the site with him in an effort to clear up this matter promptly.

Very truly yours,

MONSANTO CHEMICAL COMPANY
PLASTICS DIVISION

C. W. Gardner

C. W. Gardner
Maintenance Supervisor,
Plant Services

/mw

C

O

P

Y

MONSANTO CHEMICAL COMPANY

Plastics Division
Springfield 2, Massachusetts

February 1, 1960

County Commissioners
County of Hampden
37 Court Street
Springfield, Massachusetts

Gentlemen:

Enclosed is a design for further modification to the fence at the Upper Dam spillway at Plastics Park.

By hinging the lower section, so that it swings freely at a level 26" above the spillway floor, we believe the possibility of obstruction to the water flow is effectively eliminated. At the same time, some measure of security is retained at that point. Alternate modifications both up and down stream have been abandoned inasmuch as the one sets up a water hazard for children frequenting the Park, and the other would require using land not belonging to Monsanto. Furthermore, we believe that the design of the drawdown device at this dam affords sufficient control of the water level in the pond, that the hazard you describe is minimized.

We would be glad to meet with your engineer and inspect the site with him in an effort to clear up this matter promptly.

Very truly yours,

MONSANTO CHEMICAL COMPANY
PLASTICS DIVISION

/s/ C. W. Gardner

C. W. Gardner
Maintenance Supervisor,
Plant Services

/mw

Original letter with plan mailed to George H. McDonnell, County Hydraulic Engineer, on February 3, 1960.

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
Feb. 18, 1960

Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

I have reviewed the letter dated Feb. 1, 1960, from the Monsanto Chemical Co. in connection with the suggested solution to the problem of eliminating interference to flood flows by the woven wire fence in the spillway at Plastic Park in Springfield.

In recent inspection reports, we have pointed out that in fencing in the property around the pond, the fence was constructed across and into the spillway channel thus acting as an obstruction to flow and providing the possibility for debris being caught on the fence and thus reducing the overflow capacity at the dam.

Mr. Gardner, Maintenance Supervisor at Monsanto Chemical Co. plant has suggested that by hinging the lower section of the woven wire fence so that it swings freely downstream at a level 26" above the spillway floor, the danger of the fence acting as an obstruction to flood flows, will be effectively eliminated. At the same time, security measures will be retained to a great extent in the vicinity of the spillway.

I have examined the plan, have viewed the site in the field, and am of the opinion that if the Monsanto Chemical Co. will cause the lowest 12" of the fence to swing freely, any partial blockage of the fence by debris during flood flows will result in this portion of the fence swinging downstream and thus providing more cross sectional area in the spillway chute for the passage of overflowing water.

It might be well for the Monsanto Chemical Co. to add some riprap to the slopes of the dam embankment adjacent to the spillway should a flood flow exceed the 26" free opening and splashing occur because of flow con-

tacting the rigid portion of the fence installation. Riprap of a semi-heavy nature, particularly in the immediate vicinity of the fence, might prevent erosion to the earth embankment by continued high rates of overflow.

It is recommended that the alteration of the fence with a 12" swinging section for the full width of the spillway be approved and that a suggestion be forwarded to the Monsanto Chemical Co. regarding the addition of riprap to the downstream face of the dam embankment adjacent to the spillway, particularly in the fence area.

This change is of a minor nature and consequently, I do not believe it will be necessary for the owner to provide plans and specifications for filing purposes.

Respectfully submitted,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Feb. 24, 1960

Monsanto Chemical Co.
Plastics Division
Springfield 2, Mass.

Att: C. W. Gardner, Maintenance Supervisor, Plant Services

Gentlemen:

Reference is made to your communication of Feb. 1, 1960 and to the plan submitted showing the spillway chute at the pond located at Plastic Park, particularly in regard to the woven wire fence that crosses the spillway structure.

The County Hydraulic Engineer has reviewed the proposed plan and has viewed conditions in the field. Based upon his report to our Board, we hereby approve the changing of the woven wire fence for the full width of the spillway to provide for a 12" swinging section that will swing downstream and result in a clear vertical space of 26" between the bottom of the fence and the floor of the spillway directly under the fence.

It is also suggested that to further guarantee safety of the dam and prevent any erosion that might occur should debris caught on the fence cause splashing of overflowing water, moderately heavy riprap could be placed on the downstream face of the embankment at both sides of the spillway in the vicinity of the woven wire fence. This riprap facing would prevent any splashing water from causing erosion to take place on the natural earth embankment forming the dam and the left shoulder area. If there is any further question in connection with this matter, please do not hesitate to call or write our Board. The County Hydraulic Engineer will be pleased to assist you in any way possible and to inspect the work after it has been completed. He may be reached by calling Holyoke, JEfferson, 3-3991.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

MONSANTO CHEMICAL COMPANY, PLASTICS DIVISION · SPRINGFIELD 2, MASSACHUSETTS
TELEPHONE STate 8-6911

April 30, 1960

Tighe & Bond, Inc.
Holyoke, Massachusetts

Attn. Mr. George H. McDonnell, Chief Engr.

Dear Mr. McDonnell:

We have become concerned recently about a reported plan for increasing the amount of surface drainage flowing down Bircham Brook from the proposed Industrial Park near East Springfield.

As you know, along this waterway at Plastics Park, the Santonians, the social and athletic organization of the employees of the Monsanto Chemical Company, maintain a recreational area and bathing beach. The area is well patronized by many of the 3000 Monsanto employees during the summer months, many of whom spend their vacation days at this beach.

At this time, there seems to be some question as to the amount of additional water and the amount of organic pollution which may come down this waterway from the new drainage area upstream.

We are writing to you, as the County Hydraulic Engineer, to see if, in your opinion, the expected additional flow should adversely affect the dam or other portions of the stream at our location.

The Committee to Study Possible Effects
of Water Pollution in Plastics Park,

A. E. Ross, Chairman
J. F. Sullivan
F. E. Henry
C. W. Gardner
H. T. McCarthy
J. E. Lapierre
J. M. Dunleavy
M. J. Glancey

AER: wmr

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
May 12, 1960

The Hon. the Board of County Commissioners
Hampden County Court House
Elm St.
Springfield, Mass.

Gentlemen:

Enclosed for your information and file purposes please find a copy of a communication sent to the Monsanto Chemical Co. in connection with a request received by a Committee from that firm. A copy of the letter from the Committee is also enclosed. The contents of these letters are self-explanatory.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/f

CD Spfld
May 12,1960

Monsanto Chemical Co.,
Plastics Division
Springfield 2, Mass.

Att: Santonians

Gentlemen:

Reference is made to your letter of Apr. 30, 1960, from your committee formed to study effects of water pollution in Plastics Park and signed by A. E. Ross, Chairman. As of the present time, I have no detailed information concerning the proposed Industrial Park for the East Springfield section of the City. Without a doubt a large portion of the area involved will be converted from sod, grass and miscellaneous vegetation growth to an area of hardened parking stands, walkways and large building roofs. Runoff in the future will be at a much heavier rate than that experienced from the area in question in the past. It would be advisable to determine what changes are to be made to the surface of the ground and how surface drainage is to be discharged. With this information it will be possible to determine the necessary spillway capacity to pass anticipated heavy rates of runoff during time of severe precipitation. The capacity of the dam spillways can then be analyzed and their value compared with the anticipated storm load.

The undersigned, as County Hydraulic Engineer, has not had any official request to analyze the conditions expected in the stream. As owners, or representatives of the owners of the recreation facilities and the dams, it would seem that you should contact the planners of the Industrial Park and obtain from them information as to the area of ground on the drainage area that will be changed to building roofs, roadways, walkways and paved parking stands. Also, you should request copies of drainage details and explain to the persons doing the Industrial Development work the reasons why you wish this information.

This action will result in putting you on record as desiring data to be used in protecting your downstream property and either your own personnel could analyze this data or the undersigned would be willing to sit down with representatives of your group to make a preliminary study of the problems that may occur.

In regard to action that could be taken by the County, the undersigned could advise you of changes that might be made necessary in the spillways of your dams. Though the reasons for needed changes might be directly related to an upstream land owner changing the surface of the ground, I am of the opinion that this portion of the problem becomes a civil action wherein the County has no control. In other words, as County Hydraulic Engineer, I am responsible to advise the County Commissioners of the engineering needs on dams and related facilities. The County, thru its Commissioners, takes whatever action is necessary to see that dams are maintained in a safe condition. The basic reasons for a change, if they be the result of upstream activity, do not then come under the jurisdiction of the County but, the owner of the property downstream must then take whatever action he can to get relief from the person or persons making changes upstream.

In connection with pollution, particularly organic pollution, I assume that the area involved will be served with sanitary sewers. However, there will probably be foreign materials washed from roads, sidewalks and parking stands that could eventually reach the stream and might be detrimental for the use of the stream for such purposes as swimming, wading, etc. Problems of the latter nature should be worked out thru and in cooperation with Health Department authorities, as well as Planning Board officials.

I would be pleased to meet with you and representatives of your group to discuss this matter more fully, if you think that such a conference is desirable. Before such a conference would be held, I do advise that you contact the persons in charge of the Industrial Park development and obtain from them, if at all possible, a plot plan of the area in general that will indicate the acreage of land to be changed in character and the approximate changes that will be made. This could be very helpful in any discussion with you regarding adverse effect on your dams, due to possible additional stream flow at time of heavy precipitation.

Very truly yours

George H. McDonnell
County Hydraulic Engineer

GHM/cmb

MONSANTO CHEMICAL COMPANY

PLASTICS DIVISION
SPRINGFIELD 2, MASSACHUSETTS

January 4, 1961

The Board of County Commissioners
County of Hampden
37 Elm Street
Springfield, Massachusetts

Gentlemen:

We have received your letter dated December 20, 1961 containing the recommendation of your Engineer based on his recent inspection of our small dam at Lower Bircham Pond.

It is not our intention to abandon the dam or to carry out any work in the area which could cause a hazard downstream. We expect to examine the present outlet regularly and frequently to prevent any appreciable filling of the pond.

Under these circumstances there should be no problem of water accumulation. Should we decide later to actually abandon the dam, we will breach the embankment with a channel according to your recommendation.

Very truly yours,

MONSANTO CHEMICAL COMPANY
Plastics Division

C W Gardner

C. W. Gardner
Maintenance Supt.,
Plant Services

/mw

copy of this letter mailed to
Mr. McDonnell on Jan.5,1962.

Dec. 20, 1961

Monsanto Chemical Co.,
812 Monsanto Avenue
Indian Orchard, Mass.

Gentlemen:

In accordance with the provisions of Chapt. 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the small dam, situated at the Lower Bircham Bend Pond between the railroad track and the main highway, just southwesterly of your plant, has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Monsanto Chemical Co. Lower Dam

"The pond was found to be empty at the time of the last inspection. The drain culvert thru the embankment of the dam has apparently been extended into the pond by use of a tube. The tube has an open end into which the flow of the brook is directed. Thus, the structure, as existing is an earth embankment with a culvert thru the embankment. The entrance to the drain structure was partly closed and plugged with miscellaneous debris. As existing, the culvert opening can become completely plugged and thus the dam reactivated to cause water to be ponded to spillway level.

If the dam is to be abandoned, the embankment should be breached with a wide channel suitable to pass flood flows and large enough in cross section so that it cannot become plugged with debris.

The earth embankment and the spillway chute itself were found to be in satisfactory condition."

This Board concurs in the recommendation of the County Hydraulic Engineer. If the dam is to be abandoned, a proper breach should be excavated thru the embankment of the structure. It can be expected that the drain, as now existing, will become plugged and water will again be ponded to spillway level.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONE

_____

_____

_____

Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

Office of the
County Commissioners
37 Elm Street

THOMAS F. SULLIVAN
CLERK
WILLIAM F. STAPLETON, Chm.
RALPH P. WALSH

Jan. 23, 1963

Monsanto Chemical Company
812 Monsanto Avenue
Indian Orchard, Massachusetts

Gentlemen:

In accordance with the provisions of Chapt. 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the small dam situated at the Lower Bircham Bend Pond between the railroad track and the main highway, just southwesterly of your plant and the dam located at Plastic Park further upstream have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Monsanto Chemical Co. Lower Dam

" The pond was found to be empty at the time of the last inspection. A channel has been excavated and shaped across the bottom of the old pond to direct the flow of the brook into the drawdown pipe-line that has now been altered to act as a culvert thru the dam embankment. Should the pipeline become plugged, any water to be ponded would pass over the main spillway structure when the level of stored water reached the crest of the spillway. It would be advisable for the Owner to construct a rack of some sort in front of the drawdown pipe now acting as a culvert to prevent any debris from getting into the culvert and plugging the pipeline."

Monsanto Chemical Co. Upper Dam

" The embankment at this dam was found to be in good condition. The spillway was satisfactory. It was noted that an excavation has been made in the embankment on the downstream one-third, at the location of the drain pipe and that a manhole is being constructed on the drain pipe. The Owner should be notified that no control facilities, such as a gate of any type should be constructed in connection with this manhole. No plans have been filed regarding alterations or repairs nor has there been any conference with

the undersigned in connection therewith. In general, conditions at the dam were found to be satisfactory. At the time of the last inspection the pond was empty and all water flowed thru the drawdown pipeline."

If the manhole being constructed at the Upper Dam is simply an access manhole for the purpose of maintaining and servicing the drain pipe, the construction as being carried on will be satisfactory. However, if there is any plan on using this manhole for control of flow in the drain, this cannot be done. Control of drains must be at the upstream portion of a drain pipe, unless the pipe involved is of a material and constructed in such a way as to be guaranteed watertight under all operating conditions.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

November 10, 1965

Monsanto Chemical Company
812 Monsanto Avenue
Indian Orchard, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the small dam situated at the Lower Bircham Bend Pond between the railroad track and the main highway, just southwesterly of your plant and the dam located at Plastic Park further upstream have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Monsanto Chemical Co. Upper Dam

The embankment of this dam was found to be satisfactory as to shape and surface cover. However, on the shore slope directly in line with the spillway intake shaft, cavities were found under the sod surface. While making the inspection, the undersigned, while walking on the sod, experienced the collapse of the sod into the sub-surface voids. The voids are not deep but the surface of the embankment should be dug out, the cause of the voids determined and then the voids should be filled with compacted soil.

The spillway shaft itself was satisfactory. Stop logs in place were above the elevation of the water level in the pond. Water flowed out of the pond in the chute spillway. This spillway was found to be satisfactory.

Monsanto Chemical Co. Lower Dam

This dam was found to be in the same general condition as noted in recent years. The structure is not active and water passes thru the

embankment in a drain pipeline. The embankment is becoming fairly steep at the drain inlet location. No pond is forming whatsoever and the stream is now channeled in such a way that it flows parallel to the toe of the new highway embankment built adjacent to the pond site.

Should the drain become plugged, the pond will be reactivated and consequently, the dam embankment and the spillway should be properly maintained at all times. If the pond is to be used again, it would be advisable to breach the embankment at the location of the drain so that water cannot be stored under any condition of flood flow. The old pond bottom has been graded off and is now relatively smooth."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Monsanto
COMPANY

~~PLASTICS DIVISION~~

P. O. Box 1531
Springfield, Massachusetts 01101

November 17, 1965

BOARD OF COUNTY COMMISSIONERS
52 State Street
Springfield, Massachusetts

Gentlemen:

We have received your recent report advising of the regular inspection of the dam at Plastics Park and the one lower down in Bircham Brook, both on Monsanto property.

Upper Dam

We will check the shore slopes for sub-surface cavities and correct these, as suggested.

Lower Dam

We had considered breaching this embankment a few years ago. However, it appeared that a large Springfield water line passes along the west slope of the embankment, which precludes such a breaching. This area will be inspected periodically for flow restriction and the dam and spillway will be maintained at all times.

We hope this will satisfactorily meet the conditions as outlined by your Engineer. If further action is desirable, please feel free to contact us.

Very truly yours,

MONSANTO COMPANY,
Hydrocarbons and
Polymers Division

G. M. Ellsworth
Plant Engineer

GME:opg

11.19.65 Copy sent to Mr. George H. McDonnell. (F)

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
November 23, 1965

The Hon. the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

I have received a copy of the letter from Monsanto Co. dated Nov. 17, 1965, relative to their two dams on which a report was recently submitted to your Board and then forwarded to the Monsanto Co.

The enclosed communication could be forwarded to the Monsanto Co. if you concur in its contents.

Very truly yours,

George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM/mbf

Enc.

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD-Springfield
April 13, 1966

The Honorable, the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

The undersigned received a request for information from a representative of the Monsanto Chemical Corporation relative to the pond owned by the employees organization of the Corporation and known as Plastic Park Pond. The pond is carried in the County Dam Reports as Monsanto Chemical Company Upper Dam and, in the report of November 2, 1965, was the dam designated by the letter G.

The pond is fed by a brook which flows to the north and begins in a swamp located between the New York Central Railroad track and Cottage Street. The brook passes thru a small pond southerly of Page Boulevard and then flows into the pond known as Monsanto Chemical Company Upper Dam Pond.

The complaint registered had to do with the fact that the brook feeding the pond of the Company was not flowing in its normal course and that water is now flowing on the surface of the ground around the small pond southerly of Page Boulevard, thru a junk yard, westerly along the edge of Page Boulevard and then back into the brook course.

The representative of the Monsanto Chemical Corporation was concerned over the fact that with a change in flow of the brook, the pond would not fill properly and the employees organization would not have the benefit of the pond for summer recreational use.

The undersigned advised the caller that the matter apparently is one of diversion of a stream and not one relating to dams under Chapter 253 of the General Laws. I advised the caller that since water was running on the edge of Page Boulevard, the matter should probably be taken up with the Department of Streets and Engineering of Springfield since that Department would undoubtedly have an interest in the diversion of a brook along the gutter of a public street.

TIGHE & BOND CONSULTING ENGINEERS

The caller admitted that insofar as he knew, the diversion was not the result of a dam being constructed which would come under the conditions of Chapter 253 of the General Laws.

I promised the caller that I would look into the situation and if the matter came under County jurisdiction, action would be recommended by the undersigned to your Honorable Board.

On Tuesday morning, April 12, I viewed the site in the field and noted that water is flowing onto Page Boulevard thru an automobile junkyard, thence westerly along the southerly edge of Page Boulevard and back into the normal course of the brook. The water appears to be coming from a newly inundated area but there is no evidence of any dam construction. The inundated area is a low natural valley that is flooded to a depth of a few feet and the water is contained by natural earth in the rear of the automobile junkyard. Nowhere did I notice any evidence of diversion of the stream in question as the result of dam construction.

In view of the information gained in the field, it is the opinion of the undersigned that there is no action that can be taken by your Board to cause the flow of water to continue along the original brook course. Also, the route of the stream at present is such that the water returns to the brook course prior to crossing under Page Boulevard and consequently, the total flow is diminished little if any as a result of present conditions.

It is also possible that the flow is not directly related to the brook course but is flow resulting wholly or in part from the draining of a small low area filled as a result of normal wet Springtime conditions.

The information contained hereinabove is submitted to your Board for file purposes should any question ever be raised in connection with the flow of water along the southerly edge of Page Boulevard.

Very truly yours,

George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM:es

Monsanto
COMPANY

P. O. Box 1531
Springfield, Massachusetts 01101
Phone: (413) 788-6911

January 12, 1968

Board of County Commissioners
County of Hampden
52 State Street
Springfield, Massachusetts

Gentlemen:

We have received your letter dated January 3, 1968 containing the recommendation of your engineer based on his recent inspection of the dam at Plastics Park and the lower one farther downstream.

Upper Dam

We will take steps to remove the brush growth from the downstream side of this dam at Plastics Park and attempt to cause a growth of sod in this location.

Lower Dam

We do not plan to ever pond water again back of this dam and we inspect the outlet regularly for flow restriction. There is an active 30" water supply line which travels along the west slope of the embankment which precludes our breaching the dam. We will, however, continue to maintain the old spillway channel as a safety measure.

Yours truly,

Charles W. Gardner

Charles W. Gardner
Maintenance Supt.
Plant Services

CWG:gw

January 3, 1968

Monsanto Chemical Company
2812 Monsanto Ave.
Indian Orchard, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the small dam situated at the Lower Bircham Bend Pond between the railroad track and the main highway, just southwesterly of your plant and the dam located at Plastic Park further upstream have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Monsanto Chemical Co. Upper Dam

On the day of inspection, December 15, 1967 the pond was found to be empty. All stop logs have been removed from the slots in the wall of the vertical shaft spillway entrance. The only stop log in place was the bottom stop log. Water of the brook was flowing directly into the bottom of the spillway shaft, then into the pipe which extends under and across the embankment.

The embankment was found to be in satisfactory condition. However, brush growth on the downstream face is becoming quite thick. This growth should be discouraged and kept cut down. The owners should develop a growth of sod over the entire embankment, particularly, on the downstream side, if at all possible. The toe area of the embankment was found to be satisfactory.

The masonry spillway shaft was okay. The outer surface of this shaft is constructed of brick. The brick is becoming eroded at about the normal water line elevation. This erosion is not deep enough to be of any concern at the present. However, in the not too distant future repairs should be made to the eroding brickwork.

The concrete masonry inside the shaft at the base immediately adjacent to the discharge pipeline opening shows some sign of water erosion and in the near future repair work may be necessary at this location.

In the opinion of the undersigned the dam is safe. However, the owner should be advised to keep the brush cut at the downstream slope of the embankment and to promote a growth of turf on this portion of the embankment surface if at all possible.

Monsanto Chemical Co. Lower Dam

This dam was in about the same condition as previously reported. The structure is no longer active and water passes through the embankment in a drain pipeline. No pond whatsoever is formed and the stream is now channelled in such a way that it flows in a prepared ditch parallel to and at the toe of the new highway embankment built adjacent to the old pond site.

The upper end of the old pond bottom is being filled and re-graded. If for any reason the flow of the stream greatly exceeded the capacity of the drain through the embankment, or if the drain should become plugged with debris, a shallow pond would be formed and, should the water level rise to the elevation of the old spillway channel, this structure would operate to relieve the flow. If this pond is not to be used again then it might be advisable to breach the embankment at the location of the drain so that water cannot be stored by the old dam under any condition of flood flow or as a result of the drain becoming plugged with debris."

It is recommended that the removal of brush growth from the downstream face of the Upper Dam be accomplished in 1968 and that steps be taken to promote a growth of sod on this portion of the embankment as recommended by the County Hydraulic Engineer.

At the old Lower Dam no longer ponding water, it would seem advisable to follow the advice of the County Hydraulic Engineer to breach this dam if you do not plan to make further use of the dam and pond water at some future date.

The drain through the dam embankment is small and should the drain become plugged, it is possible that water will again be ponded behind the old dam.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
March 17, 1969

Monsanto Chemical Company
2812 Monsanto Avenue
Indian Orchard, Massachusetts

Gentlemen:

Reference is made to your dams, particularly the dam at Plastic Park in the City of Springfield, and the fact that there now exists a heavy snow cover throughout Western Massachusetts. The water content of this snow cover, coupled with a warm spring rain could result in extremely heavy runoff conditions. Consequently, the Commissioners of Hampden County have directed that I advise you to be sure that the spillway facilities at your dams are clear of any obstruction and that you take all precautions necessary to protect your dams as well as persons and property downstream.

Any flashboards or stoplogs still in place on spillways should be removed under controlled conditions so as not to release water downstream at a rate whereby temporary flooding could occur. Any debris which could plug a spillway or drainpipe should be cleared from above each dam.

If you have any question in connection with this matter, the undersigned can be reached at the above address and telephone number.

Very truly yours,

George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM/amd

Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

Office of the
County Commissioners
52 State Street

William F. Stapleton
Chairman

~~Ralph P. Walsh~~
Lloyd W. Fradet

Stephen A. Moynahan

December 10, 1969

Monsanto Chemical Company
2812 Monsanto Avenue
Indian Orchard, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the small dam situated at the Lower Bircham Bend Pond between the railroad track and the main highway, just southwesterly of your plant and the dam located at Plastic Park further upstream have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Monsanto Chemical Company Upper Dam

The embankment forming this dam is in fair condition. All brush growth on the downstream slope and along the downstream toe of the dam should be removed. The downstream surface of the dam should be loamed, seeded and fertilized so as to develop a good turf cover.

On the day of inspection the pond was empty. The drawdown pipe was operating and stoplogs were out of the slots in the spillway vertical shaft. A screen was in place of the stoplogs.

It is recommended that the owner be advised to remove the brush growth and develop a good turf cover on the downstream slope and at the toe of the dam as recommended hereinbefore."

"Monsanto Chemical Company Lower Dam

This small dam was in the same general condition as previously reported. The drain is open, is clean and functioning. All flow of the stream passes thru the dam via the drain conduit. No water whatsoever is ponded.

If the owner does not plan to pond water again, the embankment should be breached.

The old spillway is in poor condition. It is eroded at the downstream end and the central section is partially plugged with piled earth and debris.

In the opinion of the undersigned, the dam will serve no purpose whatsoever as it now exists and can only become a liability to the owner if it ponds water. Though the dam itself as now existing does not endanger persons and property downstream, a channel should be dug thru the dam to eliminate its ponding of water should the drain become plugged."

It is recommended that the removal of brush growth from the downstream face of the Upper Dam be accomplished in 1970 and that steps be taken to promote a growth of sod on this portion of the embankment as recommended by the County Hydraulic Engineer.

At the old Lower Dam no longer ponding water, it would seem advisable to follow the advice of the County Hydraulic Engineer to breach this dam if you do not plan to make further use of the dam.

The drain through the dam embankment is small and should the drain become plugged, it is possible that water will again be ponded behind the old dam.

The comments contained in the previous three paragraphs are about the same as those contained in our communication of January 3, 1968. In view of the fact that these recommendations were made two years ago, it is anticipated that some action will be taken early in 1970 to at least remove the brush from the Upper Dam and to begin the development of sod cover.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

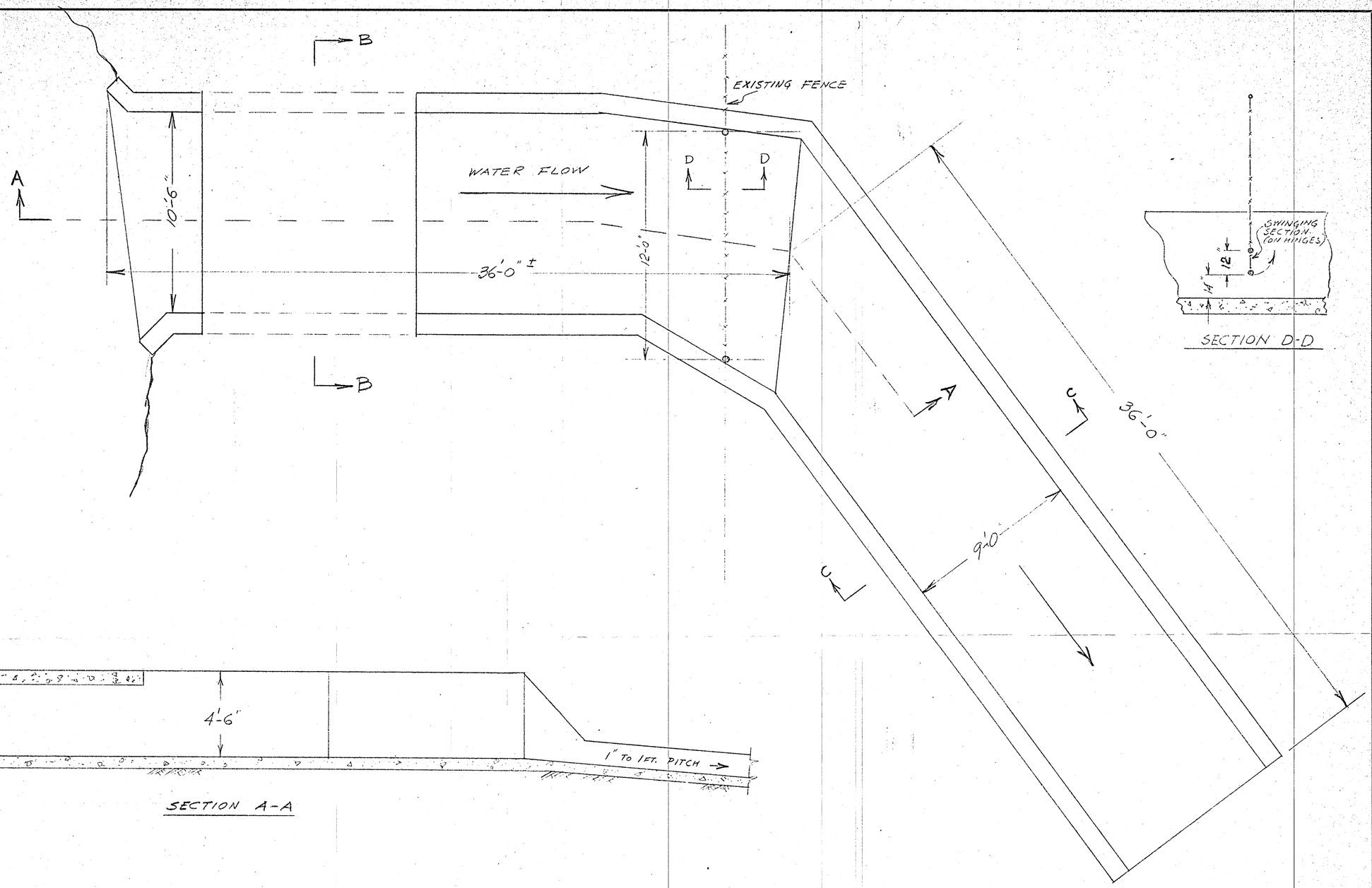
Very truly yours,

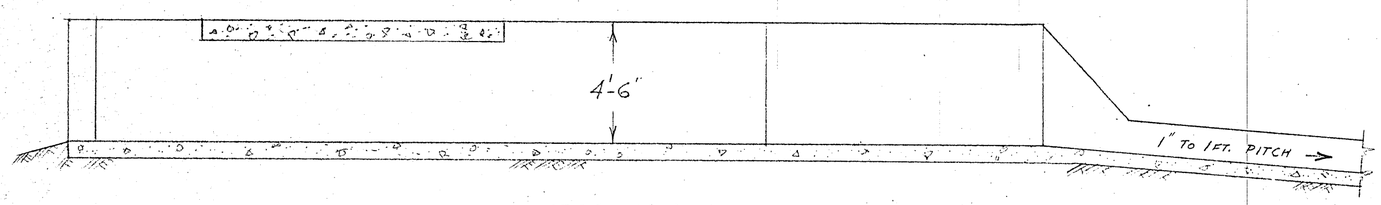
BOARD OF COUNTY COMMISSIONERS

_____

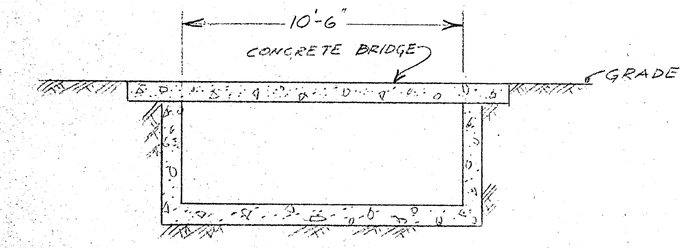
_____

_____

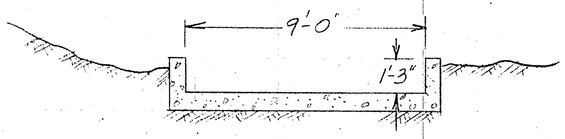




SECTION A-A



SECTION B-B



SECTION C-C

REV.	LOC.	DESCRIPTION	BY	APP'D	DATE

Monsanto Chemical Company
PLASTICS DIVISION SPRINGFIELD, MASS.

LOCATION SPRINGFIELD		PROJ. NO.	
		EST. NO.	
DEPT.	BLDG. PL. PARK	JOB. NO.	

POND SPILLWAY AT PLASTIC PARK

	BY	DATE	APP'D	DATE	APP'D	DATE
DRAWN	V.G.	1/20/64				
CH'KD.						
PROJ. ENGR.	FJR	1/27/64				

SCALE: $\frac{1}{4}$" = 1'-0"

DWG. NO. CS-1123

LITHO IN U.S.A. N.E.BLUE 165 M 25770

Hogan Dams fka Abbe Reservoir Dams

1926 Springfield

Ice pond dam located on Dingle Brook and Abbe Resevoir Dam located on Abbe Brook - it appears Abbe Reservoir Dam may have been owned by Chicopee Water Works in 1926.

Abutters	Chicopee Water Works
Dam	Hogan Dams
Dam	Abbe Resevoir Dams
Name	Hogan, Peter F
Water	Abbe Brook
Water	Abbe Reservoir
Water	Dingle Brook

Chicopee Water Works,
Chicopee, Mass.

you are notified that your
Alle Reservoir dam, located on Alle Brook so
called in the City of Springfield, etc.

"To increase the factor of
safety against flood flow topping the
structure, it is recommended that a
surface overflow or weir, located
at the most convenient place, be
added to the structure."

Peter F. Hogan
102 Woodmont St.,
Springfield, Mass.

You are notified that your ice pond dam located on Single Brook or called in the City of Springfield, etc.

"Near the south end of the structure there is some leakage and it is recommended that this be stopped and that a surface overflow of some kind be attached to the structure."

Now, therefore, etc.

March 24, 1926

Chicopee Water Works,
Chicopee, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your Abbe Reservoir dam, located on Abbe Brook so-called in the City of Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "To increase the factor of safety against flood flow topping the structure, it is recommended that a surface overflow or swale, located at the most convenient place, be added to the structure."

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

February 24, 1926

Mr. Peter F. Hogan,
102 Woodmont Street,
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your ice pond dam located on Dingle Brook so called in the City of Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "Near the south end of the structure there is some leakage and it is recommended that this be stopped and that a surface overflow of some kind be attached to the structure."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable time.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

November 17, 1926

Mr. Peter F. Hogan,
102 Woodmont Street,
Springfield, Mass.

Dear Sir:

Inasmuch as your dam was inspected quite recently by our Engineer who found that no repairs had been made thereon, your attention is called to the notice sent to you on February 24, 1926 of which a copy is herewith enclosed.

In case you would like further information regarding the repairs required than that contained in notice, should you communicate or call upon our Engineer, James L. Tighe of the firm of Tighe & Bond, 189 High St., Holyoke, Mass., he will be glad to advise you.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

RETURN RECEIPT

Received from the Postmaster the Registered or Insured Article, the original number of which appears on the face of this Card.

(Signature or name of addressee)

(Signature of addressee's agent)

Date of delivery. AUG 8 1940, 193

Form 3811

U. S. GOVERNMENT PRINTING OFFICE

Post Office Department

OFFICIAL BUSINESS

REGISTERED ARTICLE

No. 14233

INSURED PARCEL

No. _____

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

POSTMASTER OF DELIVERING OFFICE

AND DATE OF DELIVERY

SPRINGFIELD AUG 8 5 PM 1940 MASS.

Return to Ct. Commissioners

(NAME OF SENDER)

Street and Number, or Post Office Box, _____

SPRINGFIELD,

MASSACHUSETTS.

August 7, 1940

Mr. Peter F. Hogan
Liberty Street
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your dams on Dingle and Abbe Brooks in Springfield have been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

> "At the upper dam, the gate-well of the drain pipe, built of brick and concrete, is in poor condition and should be repaired. Likewise, the brush and weeds growing in the swale at the north end of the structure should be cut down and removed. If the pond formed by the lower dam is to be maintained, the washout at the east end of the dam should be filled with gravel, thoroughly compacted and the whole structure overhauled and put in a safe condition."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

Form 3811
Rev. 1-4-40

RETURN RECEIPT

Received from the Postmaster the Registered or Insured Article, the original number of which appears on the face of this Card.

1 Peter F. Hogan
(Signature or name of addressee)

2 .....
(Signature of addressee's agent—Agent should enter addressee's name on line ONE above)

Personal Receipt Demanded.

Date of delivery DEC 6 - 1947, 194...

U. S. GOVERNMENT PRINTING OFFICE 16—12431

Post Office Department

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300
(GPO)

POSTMARK OF DELIVERING OFFICE

FUTUP
AFEL
S BONI

Return to County Commissioners

(NAME OF SENDER)

Street and Number, or Post Office Box, C+ House

REGISTERED ARTICLE

No. F625

INSURED PARCEL

No.

SPRINGFIELD,

MASSACHUSETTS.

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Mass.

November 28, 1947

The purpose of the surface overflow at the time of its construction was to prevent washing out of the dam in emergencies when the twenty-four-inch brick conduit would not care for the full stream flow and its was not a paved, permanent channel.

Today, the surface overflow is the regular spillway for the dam and the stream flows through this overflow at times of prolonged or heavy rainfall and runoff. The stream has scoured out the down stream face of the dam, forming a deep gully which will soon eat through the structure causing its failure.

The failure of this structure might wash out the City of Chicopee Dams on Dingle Brook, streets in Springfield and Chicopee and the Chicopee Falls Branch of the Boston and Maine Railroad.

On Dingle Brook about 400 feet above the mouth of Abbe Brook is located the Hogan Dam No. 1. It is an earthen embankment one hundred and twenty-five feet in length and ten feet in height. It is fourteen feet in width on top and carries a driveway. The overflow is located in the dam, about twenty feet from its south end and is a ten inch vertical pipe connected with a twelve inch pipe, laid horizontally through the structure. There is, also, a surface overflow or swale at the east end of the dam. The pond formed by the dam covers about an acre.

The City of Springfield now discharges one-39", one-36" and 15" storm water sewer into Dingle Brook above the Hogan Dam. This concentration of flow at times heavy storm water run-off overloads the 10" pipe spillway and the dam is overtopped.

Mr. Hogan stated that he is considering breaching this dam to allow for a clear passage for the stream.

I recommend that Peter F. Hogan, 1173 Liberty Street, Springfield by notified to forthwith alter and repair the No. 2 dam by the construction of an adequate, permanent spillway and to enlarge the capacity of the spillway of the No. 1 Dam so that these structures will not be dangerous to life, property, roads or bridges on the stream below.

Respectfully submitted,

Philip E. Bond

County Hydraulic Eng.

December 5, 1947

Mr. Peter F. Hogan,
1173 Liberty Street,
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your Dam No. 1 on Dingle Brook and your Dam No. 2 on Abbe Brook in the City of Springfield have been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him:

"The City of Springfield now discharges one 39-inch, one 36-inch and one 15-inch storm water sewers into Dingle Brook above the Hogan Dam No. 1. This concentration of flow at times of heavy storm water run-off overloads the 10-inch pipe spillway and the dam is over-topped.

The City of Springfield now discharges one 36-inch, one 30-inch and one 15-inch storm water sewers into Abbe Brook above the Hogan Dam No. 2. This concentration of flow at times of heavy storm water run-off overloads the 12-inch cast iron pipe with its 6-inch outlet, water raises in the pond and flows through the surface overflow at the north end of the dam. Today, the surface overflow acts as the regular spillway for the dam, at times of prolonged heavy rainfall and run-off, and it is not a paved permanent channel. The stream has scoured out the down stream face of the dam forming a deep gully which will soon eat through the structure causing its failure.

December 5, 1947

Mr. Peter F. Hogan - 2

> I recommend that Peter F. Hogan, 1173 Liberty Street, Springfield, be notified to forthwith alter and repair the No. 2 Dam by the construction of an adequate, permanent spillway and to enlarge the capacity of the spillway of the No. 1 Dam so that these structures will not be dangerous to life, property, roads or bridges on the stream below."

In view of the highly dangerous condition of the dams as revealed by this report, you are hereby ordered to make such alterations or repairs as recommended in said report. If you refuse or neglect to do so, the County Commissioners will take such further action as is required by law.

The Commission requests that we be advised not later than December 17, 1947 as to what action is proposed to be taken by you in compliance herewith.

Yours very truly,

COUNTY COMMISSIONERS

Charles W. Bray

William Dwight

Thomas F. Sullivan

February 4, 1948

Philip E. Bond, the County's Hydraulic Engineer, came in this morning to report on two dams - one, the Peter F. Hogan Dam - Mr. Hogan has built a temporary spillway on the Abbe Brook which is all right for the present.

R. K. Muller from McClintock & Craig - here January 12,1949 to see what records we have on the Hogan Dam.

Mr. Hogan has been to see them to have them suggest improvements to his dam and what the Engineering Firm could give him in the way of a design for the spillway.

Mr. Müller was shown Mr. Bond's report dated Nov.28,1947.

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

March 22, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attn: Thomas F. Sullivan, Chairman

Gentlemen:

On Friday, March 17, 1950, the undersigned called Mr. Hogan, owner of two dams within the City of Springfield, in answer to a previous telephone call from him stating that his two dams, located near Liberty Street (one on Dingle Brook and one on Abbey Brook) had been washed out following a rain storm on the night of March 8, 1950. The damage to the dams was not discovered by the owner, however, until Friday, March 10.

The upper dam, known as Hogan No. 2 Dam, is located on Abbey Brook about 800 feet upstream from its mouth at a point where the drainage area contributary is three-quarters of a square mile. The dam formerly belonged to the City of Chicopee Water Works and formed what was known as the Abbey Reservoir which covers about three and one-half acres, and which was discontinued many years ago as a water supply for the City of Chicopee. The dam is an earthen embankment 210 feet in length, 13 feet in height, and approximately 12 feet in width on top. The top of the dam carries a roadway to the owner's property across the brook. At one time a brick gate-house was located in the pond at the upstream toe of the dam. From this gatehouse there was laid through the dam a circular waste conduit, two feet in diameter. At the present time the gatehouse has disappeared; the foundation and inlet has been destroyed; and the two-foot conduit is either nearly closed or completely plugged.

The temporary spillway of 15-inch concrete pipe, apparently built without head or end walls, was laid through the dam under the roadway. The invert of the pipe when laid was located approximately six feet below the top of the dam. This pipe constituted the only spillway for the structure. It was in this area of the dam (the northerly end) that the wash-out occurred, and at present a gully has been washed through the dam at the site of the spillway pipe and only a small pond is formed behind the dam.

McDonald Dam

1938 Springfield

Complaint against Fred McDonald by Peter J. Dillon regarding a small fish pond dam on a tributary of Sixteen Acres Pond on the south branch of Mill River in East Springfield.

City/Town	Springfield
Name	Dillon, Peter J
Name	McDonald, Fred
Streets	Wilbraham Road
Streets	Senator Street
Water	Mill River, South Branch
Water	Mill River
Water	Sixteen Arces Pond

see if it is lawful for him to do this.

Yours very truly,

Mr & Mrs Peter J. Dillon.

Copy of this letter given to Mr. Tighe on Nov. 2, 1938.

11/9/38 - T.J.C. said "no reply necessary" because Mr. Tighe has explained it to the Dillons.

the water stays in my land causing considerable damage to my crops.

When he had this constructed we understand he did not even bother to take out a permit.

He is not the owner of this land, but he leased the property for five years. This lease has run out but he still has possession of the place.

Will you please advise

SPRINGFIELD
OCT 31
11 PM
1938
MASS.

Thos J Costello
141 Dwight Street,
Springfield, Mass.

County Commissioner

P.J. Gillon
99 Senator St Rt 1
Springfield Mass.

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 5525
MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

November 4, 1938

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

As requested, I have made an inspection of the small fish pond dam built across the headwaters of a tributayy of Sixteen Acres Pond, so called, on the South Branch of Mill River in East Springfield, and report as follows:

The location of the dam is about 500 feet west of Senator St., and about 600 feet north of Wilbraham Road. The dam is built of concrete, is 50 feet in length, 1½ feet in thickness on the average, and 3½ feet in height above the streambed.

The capacity of the pond formed by the structure, is not over a quarter of a million of gallons and the area covered thereby is less than half an acre.

According to the statutes (General Laws (Ter. Ed.) Chapter 253 Section 44.)

> "A reservoir, reservoir dam or mill dam shall not be constructed or materially altered until plans and specifications of the proposed work have been filed with and approved by the County Commissioners of the County where it is situated etc. etc. etc."
>
> "This and the six following sections shall not apply to small dams, constructed for irrigation or for other purposes, the breaking of which would involve no risk to life or property, nor to a dam where the area draining into the pond formed thereby does not exceed one square mile, unless the dam is more than 10 feet in height above the natural bed of the stream at any point, or unless the quantity of water which the dam impounds exceeds one million of gallons."

Inasmuch as the dam under consideration has a drainage area less than a square mile, a height less than 10 feet, a pond capacity less than a million of gallons, and, that in case of its breaking, would involve no risk to life or property, it appears that the approval of plans and specifications by the County for its construction was not required by law.

Respectfully submitted,

James L. Tighe

Radnor Dam

1926 Springfield

Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Radnor Dam
Name	Radnor, Samuel

November 17, 1926

Mr. Samuel Radnor,
216 North Main St.,
Springfield, Mass.

Dear Sir:

Inasmuch as your dam was inspected quite recently by our Engineer who found that no repairs had been made thereon, your attention is called to the notice sent to you on March 10, 1926 of which a copy is herewith enclosed.

In case you would like further information regarding the repairs required than that contained in notice, should you communicate or call upon our Engineer, James L. Tighe of the firm of Tighe & Bond, 189 High St., Holyoke, Mass., he will be glad to advise you.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

C/N
Enc.

Springfield City Park Dams

1950 Springfield

Also see: Dam Report Section - Springfield.

Abutters	Van Horn Park
Abutters	Breckwood Park
Abutters	Forest Park
City/Town	Springfield
Dam	Springfield City Park Dams
Dam	Van Horn Park Upper Dam
Dam	Forest Park Middle Dam
Dam	Van Horn Park Lower Dam
Dam	Forest Park Upper Dam
Dam	Breckwood Park Dam
Name	Springfield City Parks Commission - Public Parks Department

December 16, 1953

City of Springfield
Park Department
Forest Park
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at Breckwood Park has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"A large wooden tool box of the type used on construction projects is in the Pond just upstream from the spillway crest. This obstruction should be removed to prevent any restriction of flow."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Dam No. 1
North Branch
of Mill River
Breckwood Blvd
becomes the Dam

Feb. 5, 1958

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dams located at Forest Park and Breckwood Park were recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Forest Park Middle Dam

This dam was found to be in good condition. Growth of vegetation taking place thru the masonry joints of the spillway, particularly under the capstones, at the right of the spillway crest should be removed and discouraged. Such growth could cause the stones to become loose and to separate.

Forest Park Upper Dam

This dam forms Porter Lake proper and the earth embankment as well as the masonry spillway are in satisfactory condition. Maintenance and repairs are needed at the masonry spillway. These repairs should be done in the near future in order to prevent more serious and expensive work being required at a later date. In recent years it has been noted that the masonry is becoming spalled and eroded. Unless corrective action is taken, this condition will become worse with the passing of time.

Springfield Park Dept. Breckwood Park Dam

This dam is in satisfactory condition. Earth fill has been washed out from behind the wings of the head wall. This earth fill should be replaced.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

_____

_____

_____

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

Dec. 22, 1958

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Reference is made to the letter dated December 17, 1958, from the Assistant Superintendent of the Park Department of Springfield. Apparently, the Officials of the Park Department are of the opinion that since the work is being handled by the Commonwealth, no other action would be required by the City of Springfield. I believe it would be well to inform the Department of Public Parks that Chapter 253 of the General Laws of the Commonwealth of Massachusetts requires them to file plans and specifications with your Board. A suggested letter is enclosed. If you concur in its contents, this letter could be signed and forwarded.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

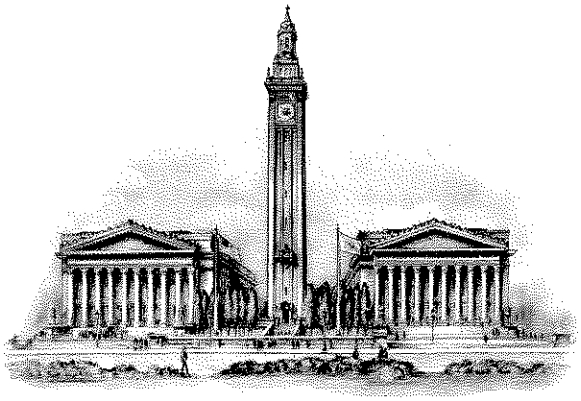
GHM/mb

Enc.

BOARD OF PARK COMMISSIONERS

THOMAS A. QUINN, CHAIRMAN
DAVID A. GOGGIN, SECRETARY
EDWARD J. O'BRIEN
WILLIAM J. WENK
ROMEO J. CYR

THEODOR R. GEISEL, SUPERINTENDENT



DEPARTMENT
OF
PUBLIC PARKS

THE CITY OF
SPRINGFIELD, MASSACHUSETTS

January 21, 1960

Board of County Commissioners
37 Elm Street
Springfield, Massachusetts

Gentlemen:

Your letter containing reports of the condition of the dams in Forest Park was received by the Board of Park Commissioners at their meeting of January 18.

The Board is pleased to note that the "Forest Park Lower Dam" was found to be in satisfactory condition. The vegetation that you referred to in the "Forest Park Middle Dam" will be removed before growth starts in the spring. The condition that you report on the "Forest Park Upper Dam" has been referred to engineers. We have been given an estimate of $10,000 to repair this condition. This amount had been requested in last year's budget and again in this year's budget. It was refused last year. This year we have been instructed by the Mayor to contact engineers of our Water Department for further advice and possible assistance, before he makes a decision on this year's budget.

We hope to be in a position to comply with your request.

Very truly yours,

Theo. R. Geisel

THEODOR R. GEISEL
SUPERINTENDENT

TRG:W:lh

(copy of this letter sent to George H. McDonnell, County Hydraulic Engineer, on Jan. 25, 1960.)

January 8, 1964

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to inspections, condition and safety of dams in Hampden County, you are hereby advised that your dam located at Breckwood Park has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "The embankment at this dam was found to be OK. The spillway structure and the conduit thru the embankment and under the road was also found to be OK.
>
> A stone masonry retaining wall at the top of the embankment, downstream side, situated to the right of the conduit portal has failed and is leaning over downstream. This retaining wall should be repaired. The condition, however, does not endanger the dam."

As pointed out in the report from the County Hydraulic Engineer, the condition of the failed earth retaining wall on the embankment does not endanger the safety of the dam. However, our Board wishes to call your attention to this condition so that you may take action and repair the wall during the coming year, if you so desire.

Any further information concerning this matter which you may desire will be furnished by this Office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
June 1, 1964

The Hon. the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

On Thursday, May 21, 1964, the undersigned made a special inspection of the Middle and Upper Forest Park Dams owned by the City of Springfield and located within Forest Park. The inspection was made at the request of Park Department personnel. In a communication from your Board to the Springfield Park Commission dated January 8, 1964, you asked the Park Department to acknowledge receipt of your communication and to indicate to your Board a time schedule for doing the recommended repairs at the two dams.

The conference at the site of the two dams, in my opinion, has complied with the request of January 8 in that Park Department personnel had the undersigned point out the work that is needed to be done and then agreed that within a matter of a few weeks, personnel would be assigned to the work, the water level in storage in each pond would be drawn down and the necessary repair work would be done on each of the two masonry spillways and on each of the two conduits thru the dam embankments.

As agreed at the conference, if the schedule and work as discussed is carried out, all necessary repair work will be completed during this Summer. The undersigned will check the dams from time to time during the coming Summer months. Repairs to these two dams have been recommended to the Park Department by your Honorable Board for a

number of years and it would appear now as if the work will be accomplished in 1964.

Very truly yours,

George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM/mb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
October 9, 1964

The Hon. the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

For a number of years the undersigned has reported to your Board that the middle dam and the upper dam in Forest Park are in need of maintenance and repair work, particularly at the conduit thru each dam that carries the overflow from the spillway under and thru the dam embankment.

The undersigned met with Park Department personnel earlier this week and reported to your Board in a communication dated June 1, 1964, that the work of repairing the dams and particularly the conduits would be done this year.

As of the present time, no work has been done to correct the rapidly deteriorating masonry of the conduits involved and it is recommended that a communication be sent to the Springfield Park Commission directing that funds be provided in the 1965 budget for the necessary repair work and that the repair work be done following the Spring runoff of 1965.

A suggested communication is enclosed herewith for your consideration.

Very truly yours,

George H. McDonnell

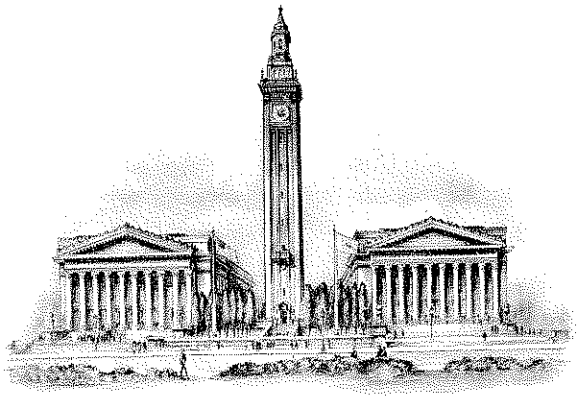
George H. McDonnell
County Hydraulic Engineer

GHM/mb

BOARD OF PARK COMMISSIONERS

WILLIAM J. KINGSTON, JR., CHAIRMAN
BOLAC S. MIDURA
LEROY CLAYBORNE
ROMEO J. CYR
LINDSAY B. JOHNSON, JR.

BALDWIN B. LEE, SUPERINTENDENT



DEPARTMENT OF PUBLIC
PARKS and RECREATION

THE CITY OF
SPRINGFIELD, MASSACHUSETTS

October 22, 1964

County Commissioner Thomas F. Sullivan
Office of the County Commissioners
37 Elm Street
Springfield, Massachusetts

Dear Sir:

We are in receipt of your letter of October 14th., concerning the dams in Forest Park. For a number of years we have been fully aware of these conditions, but due to lack of funds we have been unable to rectify the situation.

We have been in consultation with the engineering firm of Tighe & Bond, and have received definite recommendations from them. We have set aside the money to do this work, however having had to postpone the actual beginning till the Spring of 1965.

Due to the drought we were quite hesitant to lower Porter Lake which would be necessary to do this work. We were afraid of both the winter conditions with the drought as well as our inability to refill Porter Lake for our skating season this Winter. We will certainly notify you when this work is completed.

Sincerely,

Baldwin B. Lee, Superintendent

BBL/mgd

GEORGE H. McDONNELL
JOHN W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL JEFFERSON 3-3991

CD Springfield
March 17, 1969

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

Reference is made to the various dams and bodies of water under the jurisdiction of your Department in the City of Springfield, and the fact that there now exists a heavy snow cover throughout Western Massachusetts. The water content of this snow cover, coupled with a warm spring rain could result in extremely heavy runoff conditions. Consequently, the Commissioners of Hampden County have directed that I advise you to be sure that the spillway facilities at your dams are clear of any obstruction and that you take all precautions necessary to protect your dams as well as persons and property downstream.

Kindly remove all stoplogs or flashboards existing on spillway crests. The removal of flashboards and stoplogs should be done in such a way that the water discharged downstream will not be at a rate whereby temporary flooding could occur.

If you have any question in connection with this matter, the undersigned can be reached at the above address and telephone number.

Very truly yours,

George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM/amd

Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

Office of the
County Commissioners
52 State Street

William F. Stapleton
Chairman

~~Ralph M. Walsh~~
Lloyd W. Fradet

Stephen A. Moynahan

December 10, 1969

Springfield Parks Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to inspections, condition and safety of dams in Hampden County, you are hereby advised that your Middle Dam located in Forest Park and forming the lower of the two larger ponds, as well as your two dams located at Van Horn Park, have been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him as related to the dams.

"Forest Park Middle Dam

The spillway at this dam is o.k. The masonry is in very good condition. The crest was observed to be in excellent shape and no flashboards were on the crest.

The pool at the toe of the spillway is fairly deep. Entrance to the three-sectional spillway conduit thru the embankment is partially plugged. All debris collected in front of each of the three sections of the conduit should be removed to prevent any obstruction to the flow of water.

The embankment forming the dam was o.k. It is very wide in relation to its low height. The road pavement extending across the top of the embankment was in satisfactory condition.

Side slopes of the embankment are rough on the surface and some brush as well as tree growth occurs on the slopes. Because of the great width of the embankment, in relation to its low height, this growth does not endanger the dam. The toe area of the embankment was observed to be satisfactory.

The three-sectional spillway conduit itself was in good condition. The outlet facility was o.k.

The storm drain end wall near the conduit outlet is in good condition.

In the opinion of the undersigned, this dam is safe. However, the Park Department should remove the debris which has collected in front of the three-sectional spillway conduit at the toe pool in front of the spillway."

"Van Horn Park Upper Dam

The embankment forming this dam was found to be in good condition. The toe area was noted to be reasonably dry. There was some erosion on the downstream slope in the vicinity of the spillway and at the outlet from a catchbasin near the toe, not too far distant to the right of the spillway structure. The erosion is not dangerous because of the fact the embankment is very wide in relation to its height.

The lower portion of the spillway chute has settled more at the left side of the upstream end. The joint in the floor of the spillway at this location should be sealed so that water will not flow thru the joint, under the floor, and produce further settlement.

The spillway itself is satisfactory other than the settlement as just mentioned. The toe of the spillway is in satisfactory condition and there is no stream bed erosion.

The road extending along the top of the embankment was in good condition. There was no evidence of cracking or settlement. The culvert extending thru the embankment, and which is a part of the spillway facility, was found to be o.k. There were no stoplogs at the culvert entrance. The culvert was relatively free of debris. There was some sand and gravel on the floor but this does not affect the operation of the culvert.

The wingwalls on each side of the culvert entrance have begun to lean a bit toward the lake. This condition is not dangerous and does not affect the safety of the dam.

In the opinion of the undersigned, the dam is safe. However, the owner should take steps to seal the joint in the floor of the spillway chute at the upper end of the lower section where settlement has been taking place during the last few years."

"Van Horn Park Lower Dam

The inlet structure and bar rack at both the lower portion of the structure and at the top of the structure were noted to be o.k.

The conduit thru the dam appeared to be taking on an elliptical shape at about the 1/4 to 1/3 point from the upstream end. Horizontal and vertical gauge points should be established inside the conduit for the purpose of periodically checking the vertical and the horizontal dimensions. The undersigned is of the opinion that there is some movement taking place which has changed the shape of the conduit.

Check and gauge points should be established at three different locations to provide facilities for periodically checking the vertical and horizontal dimensions of the conduit at these three different locations. Thus, twelve gauge points should be established.

Some longitudinal cracking of concrete was noted at the inside top of the conduit in the area where the undersigned is suspicious that motion has taken place.

The toe outlet facility at the end of the conduit was o.k. except for the fact that the entrance to the pipe from the outlet chamber is plugged with heavy debris.

A major storm would no doubt cause overflowing of the outlet structure since water would not be able to enter the drainpipe at design capacity.

The surface of the ground just downstream of the outlet structure and directly over the outlet pipe has settled. It would appear that surface water is making its way into the drainpipe either thru open joints or cracks in the pipe.

The embankment itself is poorly maintained, but because of its massive size in relation to the quantity of water stored, the embankment is safe. Many trees grow from the surface of the embankment, including both slopes, and there is little or no turf cover on the sandy material of the embankment.

The owner should install the recommended twelve gauge and check points within the conduit, should clean the debris from the outlet facility at the toe of the dam, and should take steps as necessary to prevent washing of soil into the conduit pipe just below the outlet facility."

The work recommended by the County Hydraulic Engineer should be accomplished during the coming year. It is essential that the dams be properly maintained and that personnel of your Department do the needed routine maintenance.

Inspections of these dams will be made again during the summer of 1970 by which time it is anticipated you will have completed the work as recommended by the County Hydraulic Engineer.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Forest Park Dams aka Porter Lake Dams

1933 Springfield

Three Dams on Porter Lake. Also see: Springfield City Park Dams. Also see: Dam Report Section - Springfield. See also: County Highways (Springfield) - "Forest Park Dam on Pecousic Brook" - ch06094 & "Fountain Lake Dam..." - ch07003..

Abutters	Springfield City Parks
City/Town	Springfield
Dam	Porter Lake Dams
Dam	Forest Park Dams
Water	Porter Lake

October 14, 1964

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Att: Baldwin E. Lee, Park Supt.

Gentlemen:

For a number of years our Board has written to your Department relative to a potentially dangerous condition at the middle and upper dams in Forest Park. We call your attention to our communication of January 8, 1964. We also call your attention to the fact that the County Hydraulic Engineer met with personnel of the Park Department at each of the two dams in question on Thursday, May 21, 1964, and pointed out the rapidly deteriorating concrete masonry in the conduits under the roadway at each of these two dams.

As pointed out in our letter of January 8, 1964, sufficient time has elapsed since existing conditions were called to your attention to allow for the doing of the work as recommended.

In view of the potentially dangerous condition that is developing at these two dams and in view of the fact that recommendations have been made regarding repairs needed at these two dams without any work having been done to date, it is directed that the recommended and necessary work be accomplished immediately following the Spring runoff of 1965. Funds should be provided in your budget to cover the cost of the necessary work.

If you do not intend to follow the directive as set forth hereinabove, please notify this Board within 30 calendar days. Any information concerning the repairs as directed herein will be furnished by this office upon request.

Very truly yours,
BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

December 9, 1953

City of Springfield
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on Porter Lake at the upper level in Forest Park has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"Some erosion in the masonry at the front face on both the left and the right ends of the spillway has been taking place. This condition is not serious at the present time but early maintenance will prevent further spread of the eroded area."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

March 13, 1957

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with Chapter 253 of the General Laws of the Commonwealth of Massachusetts, your dams in the Forest Park section of Springfield have been inspected by the County Hydraulic Engineer and a report upon the condition of the dams submitted to this Board.

In connection with the Porter Lake Dam, that is, the uppermost of the three dams in Forest Park, the following is quoted from the Engineering Report.

> " In recent years it has been noted that the masonry of the spillway is becoming spalled and eroded as a result of weather and water action. This condition needs attention and the necessary maintenance work should be done in the near future to prevent further deterioration of the structure, and the need for more expensive and difficult repairs at a later date."

It is the feeling of this Board that this condition should be called to your attention so that appropriate action may be planned to prevent further damage to the structure and the possibility of more costly repairs in the future.

If you desire any further information on this matter, please do not hesitate to call upon us.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

November 24, 1954

City of Springfield
Park Department
Forest Park
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams located in Forest Park have recently been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him, relative to the Lower and the Upper of the three dams:

Lower Dam - "This dam is in satisfactory condition. However, small trees are growing out of the base of the cobblestone spillway wall on the right side of the spillway channel. These should be removed to prevent damage to the wall in the future by action of the roots of the trees."

Upper Dam - "The face of the dam is becoming worn and spalled, and will require attention in the near future to prevent the further spread of this condition and to guard against the need for more major repairs at some later date."

Any further information concerning the above which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____Chairman

_____

_____

Dec. 22, 1958

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Reference is made to the letter dated December 17, 1958, from the Assistant Superintendent of the Park Department of Springfield. Apparently, the Officials of the Park Department are of the opinion that since the work is being handled by the Commonwealth, no other action would be required by the City of Springfield. I believe it would be well to inform the Department of Public Parks that Chapter 253 of the General Laws of the Commonwealth of Massachusetts requires them to file plans and specifications with your Board. A suggested letter is enclosed. If you concur in its contents, this letter could be signed and forwarded.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Enc.

January 25, 1961

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams located at Forest Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Forest Park Upper Dam

Capstones at the right of the spillway masonry crest may fall as the result of weathering and water wear of supporting masonry. The masonry face of the spillway at both abutment areas will need attention soon to prevent further weathering and water erosion action and to provide proper support for the capstones.

The earth embankment of the dam is satisfactory.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

January 6, 1960

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams located at Forest Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Forest Park Lower Dam

This dam was found to be in satisfactory condition. The spillway, as well as the abutments, were carefully checked and found to be OK.

Forest Park Middle Dam

Growth of vegetation is still taking place thru the face of the stone masonry at the spillway. This growth is at the right top of the spillway masonry. The growth of this vegetation has been noted for a number of years and has been reported annually. Removal of the vegetation has been recommended a number of times in the recent past. The work of removing the vegetation will probably only consume one or two man hours of time. A small investment in maintenance now can do much to prevent the need for expensive repairs at a later date. It is recommended that the officials of the Park Department be notified that the vegetation still exists and that it should be removed for the good of the stone masonry at this dam. The earth embankment forming the main part of this dam was found to be in satisfactory condition.

Forest Park Upper Dam

The masonry spillway at this structure is in need of maintenance and repairs. Weathering and water wear on the stones at the face of the spillway is growing worse. Capstones

at the right end of the spillway crest will fall from the dam in the near future, unless maintenance is done at this structure.

The embankment section of this dam was found to be in satisfactory condition.

In connection with the Middle and Upper Dams at Forest Park, your attention has been called to the recommendations of the County Hydraulic Engineer following previous inspections. Corrective action, if taken in the immediate future, could prevent the need for much more expensive maintenance later on. As pointed out by the County Hydraulic Engineer, the work at the Middle Dam does not constitute much of an expense to accomplish at this time. It would seem wise to do the necessary maintenance immediately and thus eliminate the possibility of a much greater expense in the future.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Dec. 20, 1961

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your three dams, located at Forest Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him, in connection with the Middle and the Upper Dams on Porter Lake.

Forest Park Middle Dam

"The masonry spillway is in need of pointing and repairs to the stone work. The spillway conduit under the roadway, forming the embankment of the dam, is in need of masonry repairs. These repairs should not be delayed too long, since a continuation of the masonry deterioration, both at the spillway and in the conduit thru the embankment, could cause the need for expensive repairs at a later date."

Forest Park Upper Dam

"Repairs to the spillway of this dam should be done as soon as possible. Failure to make repairs and the continuation of the deterioration of the masonry of the overflow will result in loss of the capstones on the spillway and the possibility of major damage occurring to the dam. The need for repairs at this structure has been pointed out in the past and, as yet, no work of a permanent nature has been done. Repairs are also needed to the masonry conduit carrying the discharge from the spillway under and thru the embankment. Erosion and wear of the masonry has grown to a point where repairs are a necessity. The embankment at this dam is in satisfactory condition."

Necessary repairs to the spillways and the conduits at these two dams

should be done in the near future. As pointed out in the report of the County Hydraulic Engineer, a delay in doing the maintenance may result in the need for more expensive repairs at a later date. Most of the needed maintenance and repair work has been pointed out in various reports during the past few years. Erosion and deterioration of the masonry has now grown to a point where repairs are a necessity. If you wish advice and any guidance in connection with the needed work, please contact this Board or the County Hydraulic Engineer, George H. McDonnell, JE 3-3991.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

January 8, 1964

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of dams in Hampden County, you are hereby advised that the Middle Dam and the Upper Dam forming the lower and the upper portions of Porter Lake in Forest Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Forest Park Middle Dam

"The stone masonry of the spillway is in need of repair. None of the recommendations made a year ago in your letter of Jan. 23, 1963 to the Springfield Park Commission have been carried out.

The concrete masonry of the conduit that carries the overflow from the spillway under the road and thru the dam embankment should be repaired. Concrete division walls are badly eroded, particularly in the vicinity of the water line.

For a number of years, recommendations have been made to the Springfield Park Department pertaining to necessary maintenance and repairs at this dam. It would now seem necessary that your Board take definite action by directing that the Park Commission indicate a program of repair, to be carried out during 1964."

Forest Park Upper Dam

"This dam is in the same general condition as reported a year ago. Capstones at the right end of the spillway have fallen off, as predicted in previous annual reports. Damage to the structure will become more extensive and expensive to repair unless needed maintenance is done during 1964.

The conduit under the roadway embankment is in poor condition, particularly at the water-line, where erosion of concrete has become quite deep. The entire conduit should be thoroughly examined and proper repairs carried out during 1964.

The earth embankment of the dam was found to be in satisfactory condition."

Your attention has been called to conditions existing at these two dams and the related needed repairs for a period of years. No action has been taken to date to make the repairs and to improve the safety of these two structures. Work needed now can be done fairly easily and at reasonable cost but, failure to take steps to do repairs during 1964 could result in much more expensive repairs at a later date and the possibility of failure of the concrete conduit thru the embankment at these two dams.

Sufficient time has elapsed since this condition was called to your attention to allow for the doing of the work in the spillway conduits and at the spillways themselves.

You are requested to acknowledge receipt of this notification and to indicate to this Board a time schedule for doing the recommended repairs, particularly repairs needed to the conduits thru the embankments.

Any further information concerning the required repairs to these two dams you may desire, will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

d25 098

SPECIFICATIONS
REPAIR AND RECONSTRUCTION
OF THE "CASCADES"
FOREST PARK
SPRINGFIELD, MASSACHUSETTS

Sept 10, 1956

ADVERTISEMENT FOR BIDS

Department of Public Parks
City of Springfield, Mass.

Sealed proposals will be received by the Board of Park Commissioners of the City of Springfield, Mass. at the Forest Park Office, until twelve o'clock noon, daylight saving time, on September 19, 1956, for the repair and reconstruction of the dam and waterways known as the "Cascades", in accordance with the plans and specifications which may be obtained at the Forest Park Office in Forest Park, upon the deposit of ten dollars ($10.00). Said deposit will be refunded when plans and specifications are returned.

Bids are to be addressed to the Board of Park Commissioners and accompanied by a certified check for an amount not less than ten percent (10%) of the bid, made payable to the City Treasurer of Springfield, Massachusetts. All bids must be endorsed "Proposal for Repair and Reconstruction of the Cascades". A satisfactory surety performance bond for the full amount of the contract price will be required of the successful bidder.

Attention is called to the requirements as to conditions of employment and minimum wage rates to be paid under the Contract.

The right is reserved to reject any or all bids, or to waive any defects in same.

BOARD OF PARK COMMISSIONERS

COMMONWEALTH OF MASSACHUSETTS
No. 6127
JOSEPH
A.
NOWAK, Jr.
REGISTERED
PROFESSIONAL ENGINEER

INFORMATION FOR BIDDERS

RECEIPT AND OPENING OF BIDS: The City of Springfield, Massachusetts, acting through its Board of Park Commissioners (hereinafter called the "Owner"), invites bids on the form attached hereto, all blanks in which must be appropriately filled in. Bids will be received by the Owner at the Office of the Superintendent of the Department of Public Parks, Forest Park, Springfield, Massachusetts, until 12 o'clock noon....September 19, 1956....and immediately following that time will be publicly opened and read aloud. The envelopes containing the bids must be sealed, addressed to the Board of Park Commissioners, Department of Public Parks of the City of Springfield, Massachusetts, and designated as "Proposal for the Reconstruction and Alteration of the "Cascades" Dam.

CONDITIONS OF WORK: Each bidder must inform himself fully of the conditions relating to the construction and labor under which the work is now being or will be performed. Failure so to do will not relieve a successful bidder of his obligations to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid. In so far as possible, the Contractor, in the carrying out of his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

The Contractor shall keep himself fully informed and comply with all existing and future laws, ordinances and regulations of the Federal, State, and Municipal governments, in any manner affecting his employees, or the conduct of the work, or the materials used or employed in the work.

SOIL AND SITE CONDITIONS: The City of Springfield does not guarantee the accuracy of any information which it may have obtained as to the kind or condition of the soil that may be encountered in the prosecution of the proposed work, neither does the City of Springfield represent that the plans and specifications drawn are based upon any data so obtained. The City of Springfield does not make any representation as to the soil conditions to be encountered or as to foundation materials.

The Contractor must, at his own risk, inspect the site of the proposed work and assume all risk as to the nature and behavior of the soil which may be encountered or of soil or water which underlies the work or is adjacent thereto, including any difficulties that may be due to quicksand or other unfavorable conditions that may be encountered in the work, whether apparent upon surface inspection or disclosed only in the process of carrying forward the work.

Attention is called to the requirements of the Specifications with regard to unwatering and coffer dams, to protect foundation work. Previous experience with the tributaries and bodies of water which are above the subject dam indicates that at least 50% to 75% of the normal flow can be completely stopped for a period of no more than three (3) days, by draining Porter Lake and allowing it to refill. Normal flow is considered to be approximately 96 sec.ft. or 4400 gallons per minute.

APPROXIMATE QUANTITIES FOR COMPARING PROPOSALS: The quantities of work as given for each item in the Form of Proposal attached hereto are only approximate, and are assumed solely for the comparison of proposals. They are not guaranteed to be accurate statements or estimates of the quantities of work that are to be performed under this contract, and any departure therefrom will not be accepted as valid grounds for any claim for damages or for loss of profits.

FORM OF CONTRACT: The form of contract to be signed by the successful bidder is to be prepared by the Law Department and is intended to contain the standard provisions for construction work for the City of Springfield. The form of contract may be examined at the Office of the Owner, and the Contractor shall be expected to be fully informed as to its contents and provisions prior to submitting his proposal for the work.

RIGHT TO ACCEPT OR REJECT PROPOSALS: The Owner may consider informal any bid not prepared in accordance with the provisions hereof and may waive any informalities in or reject part or all of any and all bids. Any bid received after the time and date specified shall not be considered.

WITHDRAWAL OF PROPOSAL: Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. No bidder may withdraw a bid within thirty (30) days after the actual date of the opening thereof.

BID SECURITY: Each bid must be accompanied by the certified check of the bidder in an amount of 10% of Bid Price. Such checks will be returned to all except the three lowest formal bidders within five (5) days after the formal opening of bids, and the remaining checks will be returned to the three lowest bidders within forty-eight (48) hours after the Owner and the accepted bidder have executed the contract, or if no contract has been so executed, within thirty (30) days after the date of the opening of bids, upon demand of the bidder at any time thereafter so long as he has not been notified of the acceptance of his bid.

MINIMUM WAGE RATES: Attention is called to the fact that minimum rates have been established for the project by the Commissioner of Labor and Industries, Commonwealth of Massachusetts, and are set forth in the contract documents.

PROPOSAL

To the City of Springfield, Massachusetts, herein called the Owner, acting through its Board of Park Commissioners of the Department of Public Parks, for the repairs and reconstruction of the dam and waterways of the "Cascades" in Forest Park, as shown on the Drawings.

The undersigned as bidder, herein referred to as singular and masculine, declares that the only parties interested in this proposal as Principals are named herein: that this proposal is made without collusion with any other person, firm or corporation; that no officer or agent of the Owner is directly or indirectly interested in this bid; that he has carefully examined the location of the proposed work, the proposed Contract Agreement, and the drawings and specifications therein referred to and he proposed and agrees that if this proposal is accepted he will contract with the Owner, in the form of the copy of the contract deposited in the office of the Owner, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in this contract in the manner and time therein prescribed and according to the requirements of the Engineer as therein set forth and that he will take in full payment for the work thereof the sum specified below, subject to additions or deductions according to the specifications and in all respects according to the terms theof.

(Note: All prices must be written in ind, in both words and figures for the entire proposal.)

ITEM NO.	ESTIMATED QUANTITY	DESCRIPTION	UNIT PRICE EACH	TOTAL
1	Lump Sum	General Site Work	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
2A	115 Cu. Yds.	Earth Excavation and Class A Back Fill	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
2B	130 Cu. Yds.	Earth Excavation and Back Fill	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)

ITEM NO.	ESTIMATED QUANTITY	DESCRIPTION	UNIT PRICE EACH	TOTAL
2C	20 Cu. Yds.	Rock Excavation and Disposal	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
3	Lump Sum	Cast Iron Pipe and Fittings	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
4	115 Cu. Yds.	Concrete	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
5	2700 Lbs.	Concrete Reinforcement	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
6A	170 Cu. Yds.	Base Stone	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
6B	100 Tons	Rubble Stone and Rip-rap	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)
7	40 Cu. Yds.	Loaming and Seeding	_____ Dollars _____ Cents ($.....)	_____ Dollars _____ Cents ($.....)

TOTAL PROPOSAL

_____ DOLLARS

_____ CENTS

($.....)

* Indeterminate: quantity assumed for comparison of bids.

Note: All prices including the total must be written in words as well as expressed in figures. In case of variation, the written prices shall govern.

All amounts and totals stated above shall be subject to verification by the Owner. In case of variation between unit prices and the amounts and totals stated by the bidder, the unit prices will be considered to be his bid. All bids must be for the entire work and must have each blank space filled in.

The quantities of work as given for each item in this Proposal are only approximate, and are assumed solely for the comparison of proposals. They are not guaranteed to be accurate statements or estimates of the quantities of the work that is to be performed under this contract, and any departure therefrom will not be accepted as valid grounds for any claim for loss of profits.

If written notice of the acceptance of this proposal is mailed, telegraphed or delivered to the undersigned within thirty (30) days after the date of opening of the bids, or any time thereafter before this bid is withdrawn, the undersigned will, within five (5) days after the date of such mailing, telegraphing or delivery of such notice, execute and deliver a contract, with approved sureties, in the form attached hereto.

The undersigned hereby designates as his office to which such notice of acceptance may be mailed, telegraphed or delivered

_____

The undersigned further agrees to comply with the requirements as to conditions of employment, wage rates and hours of labor set forth in the Form of Contract.

The undersigned hereby agrees to complete all the work shown or specified under this contract as sown on the Contract drawings, within.....
.....consecutive calendar days from the date
(Insert Number)
specified in the notice to commence work.

A certified check in the amount of at least Ten Percent (10%) of the amount of the bid price accompanies this proposal.

This bid may be withdrawn at any time prior to the scheduled time for the opening of bids or any authorized postponement thereof.

Signature and business address of Bidder:

_____ _____

_____ _____

_____ _____

_____ _____

Dated at

The names and addresses of persons interested as principals in this proposal are as follows: (Write first name in full).

_____ _____

_____ _____

_____ _____

The bidder shall state on the line below, if a corporation, the name of the state in which incorporated.

_____

The bidder is requested to state below what work of similar character to that included in the proposed contract he has done, and give references that will enable the Owner to judge of his experience, skill, and business standing.

_____

_____

_____

_____

_____

_____

_____

_____

(Add supplementary page if necessary)

APPROVED
September 26, 1956
William F. Shaleton
Thomas F. Sullivan
Ralph P. Walsh
Hampden County Commissioners

SPECIFICATIONS

General Provisions

EXTENT OF WORK (Sec. 1) The work contemplated under this contract comprises the clearing and cleaning, the repair and alteration, and the rennovation of the dam and waterways comprising the so-called "Cascades" in Forest Park, Springfield, Massachusetts. The Contractor shall furnish all labor, equipment, tools and materials necessary to perform the designated work.

CONTRACT AND WORKING DRAWINGS (Sec. II) The location, general character and important details of the work are shown on the Drawings on file at the Park Department Office, Forest Park, Springfield, Massachusetts and entitled:

Drawing No. D1795-1, Site Plan
Drawing No. D1795-2, Profiles and Sections
Drawing No. D1795-3, Sections and Details

The work shall be constructed in accordance with these contract drawings, together with any working drawings which may be furnished from time to time by the Engineer.

For construction purposes, the Contractor will be furnished with three (3) sets of plans and specifications without charge.

SUBMITTED DRAWINGS (Sec. III) Working drawings for steel reinforcement, and built-in equipment shall be submitted in triplicate for approval by the Engineer. No work shall be performed involving such items until approval is obtained.

USE OF THE PREMISES (Sec. IV) The Contractor shall be permitted limited use of the site area. Provisions for delivering and handling materials and equipment at the site, the space for the required storage of materials and equipment and for the field erection of temporary facilities, the order or sequence of the execution of the work, the methods of construction, the general conduct of the work, shall be at all times subject to the approval and direction of the Engineer.

If at any time before the commencement or during the progress of the work, or any part of it, such methods and procedures as used or to be used appear to the Engineer as unsafe, insufficient or improper, he may order the Contractor to increase their safety or efficiency or to improve their character, and the Contractor shall conform to such orders; but the failure of the Engineer to demand any increase of such safety, efficiency, adequacy or any improvements shall not release the Contractor from his obligation to secure the safe conduct and quality of the work specified.

DELIVERY AND HANDLING OF MATERIALS (Sec. V) The Contractor shall make his own arrangements for delivery and handling of equipment and materials as he may require for the prosecution of his work. The location of all temporary power lines, roadways and similar facilities shall be subject to the approval of the Engineer.

DIMENSIONS AND ELEVATIONS (Sec. VI) Figured dimensions on the drawings shall take precedence over the general drawings and shall be considered as explanatory to them, and not as indicating extra work.

If, however, subsequent working drawings by the Engineer shall contain or require extra work, the Contractor shall notify the Engineer within ten (10) days of his receipt of his receipt of such drawings as to the extra charge for the work. Failure to notify the Engineer within such time shall be construed as meaning that the Contractor accepts the drawings and will execute them without claim for extra compensation.

LINES AND GRADES (Sec. VII) The Engineer will furnish the Contractor with bench marks for lines and grades. The Contractor shall, with his own forces, obtain working or construction lines or grades as needed and in accordance with base measurements directed by the Engineer, and subject to check and review by the latter. No extra compensation shall be made to the cost of the Contractor of any of the work or delay occasioned by giving lines and grades, or making other necessary measurements for payment.

MONUMENTS AND LANDMARKS (Sec. VIII) Monuments and landmarks shall not be molested or removed by the Contractor or any of his employees without the written consent of the Engineer. Any monument or landmark so removed will be replaced by the Contractor as directed by the Engineer and at the expense of the Contractor.

NIGHT WORK (Sec. IX) No night work or work on Sundays and legal holidays requiring the presence of an engineer or inspector will be permitted, except in case of emergency, and then only to such an extent as is absolutely necessary, and upon approval of the Department of Public Parks. Should permission be obtained to operate an organization for regular or continuous night work, the lighting, safety and other facilities, which are necessary for performing such work at night, shall be provided by the Contractor.

WATER SUPPLY (Sec. X) All water used for construction purposes, as well as the expense of having the water conveyed about the work, must be provided by the Contractor, and the cost of this work shall be considered as having been included in the unit or lump sum prices stipulated for the various items of work to be done under this contract.

ELECTRIC POWER (Sec. XI) The Contractor shall make his own arrangements for electric current or power, as may be required for his work.

SANITARY MEASURES (Sec. XII) Sanitary conveniences for the use of all persons employed on the work shall be constructed and maintained by the Contractor in sufficient number, in such manner and in such places as shall be approved by the Engineer. All persons connected with the work shall be obliged to use them and any employee found violating these provisions shall be discharged and not again employed without written consent. All necessary precautions, including the care of employees, shall at all time be satisfactory to the City Health Department. The Contractor shall promptly and fully comply with all orders and regulations in regard to these matters.

AID TO THE INJURED (Sec. XIII) The Contractor shall keep in his office, ready for immediate use, all articles necessary for giving "First Aid to the Injured". He shall also have standing arrangements for the immediate removal and hospital treatment of any employee who may be injured on the work.

CLEANING UP (Sec. XIV) On or before the date of the final estimate for the work, the Contractor shall tear down and remove all temporary structures built by him, shall remove all construction plant used by him and shall repair and replace all parts of existing embankments, fences or other structures which

were removed or injured by the Contractor's operations or by employees of the Contractor; shall thoroughly clean out all sewers, drains, pipes, manholes and miscellaneous and appurtenant structures, and shall remove all rubbish and leave the grounds in a neat and satisfactory condition.

INSUFFICIENCY OF SAFETY PRECAUTION (Sec. XV) If at any time, in the opinion of the Engineer, the work is not properly lighted, and barricaded, and if under such circumstances the Contractor does not or cannot immediately put the same into proper and approved condition, or if the Contractor or his representative is not upon the ground so that he can be immediately notified of the insufficiency of safety precautions, then the Engineer may put the work into such a condition that it shall be, in his opinion, in all respects safe, and the Contractor shall pay all expenses of such labor and materials as may have been used for this purpose by him or by the Engineer. Such action of the Engineer, or his failure to take such action, shall in no way relieve the Contractor of the entire responsibility for any cost, loss or damage by any party sustained on account of the insufficiency of the safety precautions taken by him or by the Engineer acting under authority of his section.

GENERAL SITE WORK

Item 1

Section 1.1 - Unwatering and Coffer Dams. The Contractor shall construct and maintain all necessary coffer dams, channels, flumes and/or other temporary diversion and protective works; shall furnish all materials required therefor; and shall furnish, install, maintain and operate all necessary pumping and other equipment for maintaining foundations and other parts of the work free from water as required for constructing each part of the work.

The sequence of operations involving such diversion works to complete the work shall be subject to approval of the Engineer. General information as to the flow characteristics of the present brook is furnished in the "Information to Bidders", but shall not be considered as accurate or binding upon the Engineer or the Owner.

After serving their purpose, all coffer dams and other temporary protective works shall be removed.

Section 1.2 - Preparation of Foundations. After all necessary stripping and excavation have been completed, the foundation areas shall be unwatered and the foundations prepared as follows:

For "Earth Fill Embankment"--Scraping and rolling with the first layers of earth fill to insure compaction and bonding of the new with the existing earth materials.

For "Concrete Foundations"--The surfaces of any rock upon or against which concrete is to be placed shall be prepared to provide adequate bond by roughing and cleaning the rock surfaces. All loose rock fragments, spalls, dirt, gravel and other objectionable materials shall be removed from the rock surfaces. Immediately before concrete is placed, rock surfaces shall be wetted by means of stiff brooms, jets of water or other means approved by the Engineer.

Section 1.3 - Cleaning of Pipes. This Contractor shall flush and clean the present 18" cast iron pipe bypass, and the 12" vitrified clay pipeline to the adjacent lily pond. Such cleaning shall be accomplished by means of a fire hose and pump with sufficient pressure to remove all dirt, scale or other objectionable matter. Removal of any solid obstructions not removed by the above methods shall be by means of power-driven rotary cutters.

Section 1.4 - Permanent Equipment. All permanent equipment and built-in items, such as expansion joints and as indicated on the Drawings or herein specified shall be furnished and installed by the Contractor. Such equipment shall include the following:

Item	Number
Rock Anchors	150
Copper Retarders	50

In addition, this Contractor shall furnish and install the new cast-iron cap and accessories as detailed by the Drawings for the present 18" bypass pipe outlet.

Section 1.5 - Resetting of Existing Stones. Existing granite sidewall stones shall be removed from their present locations on the site, and upon completion of the new core wall shall be reset thereupon.

Section 1.6 - Removal of Existing Stone Walls. Existing field stone walls shall be removed from their present locations on the site as indicated on the drawings and shall be disposed of outside of limits of Forest Park.

Section 1.7 - New Pipe Intakes. Reinforced concrete pipes, 36 inches in diameter shall be installed as new intakes for the present 18" bypass pipe and the new 12" bypass pipe.

Such intakes shall be set so that pipe inverts are as shown on the Drawings. Where necessary, this Contractor shall build stone bases below intakes to assure alignment.

Section 1.8 - Cleaning and Clearing of Site. The areas to be excavated for foundations shall be stripped or excavated to the depths indicated by the Plans. All unsuitable material such as vegetation, roots, or other organic materials shall be removed and disposed of outside of the Forest Park limits. Sod shall be neatly stripped and placed in an area adjacent to the site to be designated by the Engineer.

No trees or cultivated shrubbery shall be removed or damaged by these operations, except those designated as being within the area wherein excavation is to take place.

In addition to the above, and as indicated by the Drawings, and herein specified, the Contractor shall remove all the present silt, debris, masonry, stones, stumps, temporary pipes and the like from the areas defined by Stations 0 + 00 to 1 + 75 and Stations 0 + 60 R and 0 + 60 L along the previous stations centerline shown on the Drawings.

During the progress of the work, all areas effected by the work or by the Contractor's operations shall be kept cleaned of all rubbish, surplus materials and unneeded construction equipment.

This Contractor shall restore or replace, when and as directed, any Park Department Property damaged by his work, equipment or employees to a condition at least equal to that existing immediately prior to the beginning of operations.

Section 1.9 - Payment. Payment for all work under Item 1 shall be based on the lump sum proposed by the Contractor and shall be paid in portions upon completion of each portion of the work in accordance with Contract terms.

EXCAVATION AND BACKFILL

Item 2

Section 2.1 - Excavation. The Contractor shall, under Items 2A and 2B make all earth excavations as required for the following:

1. For new concrete core wall.
2. For new concrete aprons and sidewalls, as required.
3. For new 12" cast iron bypass line as required.

Under Item 2C, the Contractor shall remove and dispose of, in a manner approved by the Engineer, any subsurface rock encountered during excavation operations. Surface rock, debris and old brick masonry work shall be removed under Item 1. Clearing of the site, tree removal and the like is also included under Item 1.

Profiles and contours of existing ground elevations and the approximate elevations of the finished grades of the fills around structures to be built under this contract are shown on the Drawings. The contours and elevations of the present ground are believed to be reasonably correct, but do not purport to be absolutely so, and together with any schedule of quantities are presented only as an approximation. The Contractor shall satisfy himself, however, by actual examination of the site of the work, as to the existing contours and elevations and the amount of work required under this Item. If the Contractor is not willing to accept the ground surface elevations indicated upon the Drawings for payment, he shall so notify the Engineer prior to the starting of any excavation work.

Section 2.2 - Unauthorized Excavation. All excavations carried outside of the lines and grades given or specified, together with the disposal of such material, and all excavations and other work resulting from slides, cave-ins, swellings or upheavals, shall be at the Contractor's own cost and expense. All spaces beneath foundations resulting from unauthorized excavations or from slides or cave-ins shall be refilled at the Contractor's expense, with concrete or other suitable material.

Section 2.3 - Additional Excavation. It is expected that satisfactory foundations will be found at the elevations shown on the Drawings, but in case the materials encountered are not suitable, or in case it is found desirable or necessary to go to additional depth, the excavation shall be carried to an additional depth as ordered and refilled as directed. Excavation to additional depths, when ordered, will be paid for under Item 2, or under the appropriate Item where different materials are required.

Section 2.4 - Sheeting and Shoring. The Contractor shall be responsible for supporting and maintaining excavations required hereunder, and even to the extend of sheeting or shoring the sides and ends of excavations with timber or other supports. If the sheeting, braces, shores and stringers or waling timbers or other supports are not properly placed or are insufficient, the Contractor shall provide additional or stronger supports. The requirements of sheeting or shoring or of the addition of supports shall not relieve the Contractor of his responsibility for their sufficiency.

The Contractor shall remove all such timbering and supports except

as directed by the Engineer.

Section 2.5 - Protection for Existing Structures and Property. All existing pipes, valves, and structures not required to be changed, removed or altered by the work shall be carefully supported and protected from injury by the Contractor without additional compensation, and in case of injury, they shall be restored by him without compensation therefore, to as good condition as that in which they were found.

Tree roots shall not be mutilated nor shall they be cut except by permission of the Engineer. When permitted to cut tree roots the ends shall be cut off smooth, without splitting or shattering. The trunks of the trees shall be carefully protected from damage, and if unavoidable damage occurs, the injured portions shall be neatly trimmed and covered with an application of grafting wax. Power driven excavating machinery, if used, shall be handled with care to prevent damage to trees, particularly to overhanging branches, and branches shall not be cut off except by special permission of the Engineer.

When ordered by the Engineer, the Contractor shall dig up, handle, protect and properly reset hedges, small trees and shrubbery along the line of or adjacent to the work, and they shall take all reasonable care in this work.

The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings, where required for the accommodation of travel and to provide access during construction, and shall remove said structures thereafter.

Section 2.6 - Backfilling. Backfilling of excavations made for concrete sidewalls shall be carried out with the previously excavated materials. Such backfill shall be compacted by "puddling" and tamping in layers not exceeding 12 inches in thickness.

Backfilling of excavations made for the new concrete core wall shall be carried out in a manner and with materials hereinafter specified.

No materials shall be placed until unwatering and protection of the work is accomplished.

Section 2.7 - Earth Embankment. The earth fill portions on both the upstream and downstream side of the new concrete core wall, and within the limit lines shown on the Drawings, shall consist of a well-graded mixture of sand and gravel, termed Class A Backfill, meeting the following requirements:

Material	Percent by Weight
Gravel	10%
Sand	75%
Silt	10%
Clay	5%

Sieve No.	Percent Passing by Weight
No. 10	95 - 100%
No. 40	30 - 70%
No. 200	10 - 15%

It is intended that the above requirements serve as a guide to the selection of Class A backfill material, however, no such fill shall be placed until approval of the Engineer is obtained.

Samples of material for Class A backfill shall be submitted to the Engineer, together with sieve analysis reports, and all such other information as he shall designate as being required for approval.

The remaining areas of the work shall be backfilled with bank-run sand and gravel with gravel limited to stones no larger than 1/4" in size. Excess materials from site excavation may also be used as such fill.

Section 2.8 - Placement of Fill. Class A backfill shall be placed in layers not greater than 6" in thickness after rolling. Rolling shall be done with a roller of sufficient weight to insure compaction and with wetting of the fill material, all as directed by the Engineer. Where rolling is not possible, mechanical tampers weighing not less than 20 lbs. shall be used.

Other backfill shall be placed in a similar manner, except that fill layers shall not exceed 12" in thickness after rolling.

No stone or rock fragments weighing over 50 lbs. shall be backfilled into excavations.

Section 2.9 - Finish Lines. The upstream face of the earth fill shall be reasonably true to line and grade, and all projections of more than 6" outside the neat lines of the earth fill shall be removed before rip-rap is placed.

In other areas, backfilling shall be done to finish lines and grades as shown on the Drawings.

Section 2.10 - Rock Excavation. The Contractor under Item 2C shall excavate any sub-surface rock within the lines and grades as shown or required and shall satisfactorily dispose of such material.

No rock shall be considered for payment unless it is exposed to view and measured for payment by the Engineer.

Section 2.11 - Measurement and Payment. All materials to be paid for under Items 2A and 2B shall be measured in cut, and unless otherwise specified, shall be paid for only once, whether the material be placed directly in its final position or rehandled.

Where the limits of excavation for one structure intersect or overlap the limits of excavation for another structure, no additional excavation shall be measured for payment on account of this intersection or overlapping.

Payment will be made only for excavation within the lines and grades given and within the following defined limits:

Excavation for structures, unless otherwise specified, shall be measured by the vertical planes distant four (4) feet further apart than the outside neat lines of the foundations of the structure and parallel thereto, and from the original surface of the ground to a surface following the contour of the outside neat lines of the bottoms of the structures.

No allowance will be made for excavation beyond the above defined limits when made by the Contractor for working space, pump sumps and drainage ditches, or other like purposes.

The unit prices stipulated per cubic yard for excavation and backfill under Items 2A and 2B shall include the excavation and disposal of all materials; the furnishing, placing and removing of all sheeting and shoring; the storage, rehandling and disposal of all excavated material; the transporting, backfilling and compacting of fills; the protection of existing structures; and the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown.

Item 2C shall apply to rock excavation, and the price bid therefor shall include cost of same over and above cost of earth excavation.

CAST-IRON PIPE

Item 3

Section 3.1 - General. Under Item 3, this Contractor shall furnish and install cast-iron pipe as shown on the Drawings or herein specified, or both, as follows:

1. New 12" cast-iron pipe bypass complete with pipe fittings.

Section 3.2 - Materials. Cast-iron pipe and fittings shall be mold cast, bell and spigot pipe conforming to the requirements for Class D, AWWA pipe.

Section 3.3 - Joints. Joints shall be made by partially filling the annular space between spigot and bell with jute or oakum lightly caulked. Molten lead shall then be poured and firmly caulked in place.

Section 3.4 - Laying. Cast-iron pipe shall be laid to the lines and elevation shown on the Drawing and care shall be taken that such pipe is supported in a manner directed by the Engineer.

Section 3.5 - Payment. Under Item 3, this Contractor shall receive a lump-sum payment for furnishing and installing all cast-iron pipe and fittings herein described.

CONCRETE

Item 4

Section 4.1 - General. Under Item 4, the Contractor shall furnish all labor and materials to complete the concrete herein described, or shown on the Drawings, or both, as follows:

1. Footings
2. New concrete core wall
3. New concrete aprons and sidewalls
4. New concrete base slab in pool

All cement shall be site-mixed or ready-mixed as produced by a plant acceptable to the Engineer.

Section 4.2 - Concrete Quality. All concrete shall meet the following limiting requirements:

1. Minimum allowable compressive strength at 28 days shall be 2500 psi.
2. Maximum allowable net water content, per sack of cement, shall be 7 gallons.
3. Minimum amount of cement per cubic yard of concrete shall be 4 3/4 bags.
4. Consistency as measured by the slump test shall be 2 to 4 inches.

Section 4.3 - Portland Cement. All cement used on the work shall be American-made portland cement, free from water-soluble salts or alkalies which will cause efflorescence on exposed surfaces. The cement manufacturer shall have a well-established reputation for producing a uniform, high-quality product. Unless otherwise approved by the Engineer, cement from only one mill shall be used throughout the work. All cement used in exposed work shall be uniform in color.

Air-entraining cement shall not be used.

Normal portland cement shall be Type II conforming to the ASTM Standard Specifications for Portland Cement, Designation C150-49, and to Federal Specification SS-C-192 for Cements; Portland.

High-early-strength cement may be used only with the written permission of the Engineer, but no additional payment will be made to the Contractor for the use thereof. If used, it shall be Type III conforming to the above-mentioned ASTM and Federal Standard Specifications.

All cement to be used in the work shall be subject to testing to determine that it conforms to the requirements of the specifications. The methods of testing shall conform to the appropriate specifications, but the place, time frequency, and method of sampling will be determined by the Engineer in accordance with the particular conditions of this project.

When used in the work, cement shall be free from lumps and partially or wholly set cement.

Section 4.4 - Admixtures. Admixtures causing accelerated setting of cement in

concrete shall NOT be used. The use of admixtures to improve workability or durability, or for waterproofing, will not be permitted except by written consent of the Engineer and then only under close laboratory control.

Section 4.5 - Water. The water for concrete shall be clean, fresh, and free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances.

Section 4.6 - Fine Aggregate. Fine aggregate shall consist of inert natural sand conforming to the ASTM Standard Specifications for Concrete Aggregates, Designation C33-49, except that the test for organic impurities shall conform to the ASTM Standard Method of Test for Organic Impurities in Sands for Concrete, Designation C40-33, and also conforming to the following detailed requirements:

Grading:

Sieve	Percent retained
#4	0-5
16	25-40
50	70-85
100	93-97

Fineness modulus:	2.50 - 3.15
Organic impurities:	Not darker than Fig. 2
Silt:	Not more than 2%
Mortar strength:	Compression ratio not less than 95%
Soundness:	Weighted average loss when subjected to 5 cycles of the soundness test using magnesium sulfate, not more than 10%

Section 4.7 - Coarse Aggregate. Coarse aggregate shall consist of well-graded gravel of crushed stone, conforming to the ASTM Standard Specifications for Concrete Aggregates, Designation C33-49 except that the test for organic impurities shall conform to the ASTM Standard Method of Test for Organic Impurities in Sands for Concrete, Designation C40-33, and also conforming to the following detailed requirements:

	Designated size				
	2 in.	1-1/2 in.	1 in.	3/4 in.	1/2 in.
	Percent passing Sieve				
2-in. sieve	95-100	100			
1-1/2-in. sieve		95-100	100		
1-in. sieve	50-70		90-100		
3/4-in. sieve		50-70		100	100
1/2-in. sieve	15-30		25-60		90-100
3/8-in. sieve		10-30		20-55	
No. 4 sieve	0-5	0-5	0-10	0-10	0-15
Fineness modulus (±0.20)	7.45	7.20	6.95	6.70	6.10

Organic impurities:	Not darker than Fig. 1
Silt:	Not more than 1.0%
Soundness:	Weighted average loss when subjected to 5 cycles of the soundness test using magnesium sulfate, not more than 14 percent

Aggregate used in concrete shall not exceed the following maximum designated sizes:

1 1/2-in. for footings.
1-in. for all other concrete.

Section 4.8 - Samples of Aggregates. If required, the Contractor shall submit samples of fine and coarse aggregates to the Engineer at least two weeks before the Contractor proposes to use them in the work. At least one cubic foot of each size of aggregate shall be submitted in suitable containers. All samples shall be plainly and neatly labeled indicating the source, where proposed to be used, date, and name of collector.

Materials shall not be delivered to the site or used until the samples have been approved, and, as used, they shall in all respects be equal to the approved samples.

Section 4.9 - Testing Aggregates and Determining Proportions. No concrete shall be used in the work until the materials and proportions have been approved by the Engineer.

The conformity of aggregates to the specifications hereinbefore given, and the actual proportions of cement, aggregates, and water necessary to produce concrete conforming to the requirements set forth in Article 4.2, shall be demonstrated and determined by tests made with representative samples of the materials to be used on the work. All such tests shall be made by an approved laboratory at the expense of the Contractor.

Reports on the tests of aggregates, and a statement of the proportions proposed for the concrete mixture, shall be submitted in triplicate to the Engineer for approval as soon as possible, but not less than 5 days prior to the proposed beginning of the concrete work. If the Contractor can furnish similar, reliable information from an acceptable source, and of date not more than 4 months prior to the time when concrete will be used on this project, the above requirements for laboratory tests may be modified by the Engineer.

The Engineer shall have the right to make check tests of aggregates and concrete, using the same materials, and to order changes as may be necessary to meet the specified requirements. Cylinders made in the field shall be made and cured in accordance with the ASTM Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field, Designation C31-49. Laboratory tests and laboratory-made cylinders shall conform to the appropriate tests and procedures specified above for testing aggregates and for determining the relation between water content and compressive strength.

If concrete of the required characteristics is not being produced as the work progresses, the Engineer may order such changes in proportions or materials, or both, as may be necessary to secure concrete of the specified quality. The Contractor shall make such changes at his own expense and no extra compensation will be allowed because of such changes.

If, as the work progresses, the characteristics of the materials originally approved undergo a change, or if the Contractor wishes to use other materials, he shall submit, for approval, evidence that the new combination of materials will produce concrete meeting the stated requirements and will not result in objectionable changes in the color or appearance of the work.

Section 4.10 - Measuring Materials. All materials for concrete, including water, shall be measured with equipment and facilities suitable for their accurate measurement and capable of being readily adjusted to changing conditions as required.

Cement in whole standard sacks need not be measured.

Water shall be measured by volume or weight; the error of measurement shall not exceed 1/2 of 1 per cent.

Unless otherwise authorized, cement in bulk or fractional sacks, and each size of aggregate, shall be weighed separately; the error of measurement, for successive quantities, shall not exceed 1 percent.

Where volumetric measurements are authorized, the weight proportions shall be converted to equivalent volumetric proportions and suitable allowance shall be made for variations in the moisture condition of the aggregates, including the bulking of fine aggregate.

Section 4.11 - Site-Mixed Concrete. Concrete to be produced at the site shall be mixed in an approved batch mixer with a capacity of not less than 1/2 cu. yd., except for small quantities which, by permission, are hand mixed. The volume of the mixed batch shall not exceed the manufacturer's rated capacity of the mixer.

The minimum mixing time for each batch (from the time when all solid materials and water are in the drum) shall be 1-1/2 min. for mixers of 1-cu. yd. capacity or less; for mixers of larger capacity, the mixing time shall be increased 30 sec. for each additional half cubic yard or fraction thereof. The mixer shall revolve at uniform peripheral speed of about 200 fpm. The entire batch shall be discharged before the mixer is recharged.

If the concrete is mixed by hand it shall be done on a suitable surface. The cement and aggregates shall be mixed dry until an even and uniform color has been attained throughout. The proper quantity of water shall then be added and the whole mass turned with square-edged shovels until it has become intimately mixed.

Section 4.12 - Ready-Mixed Concrete. Ready-mixed concrete will be permitted provided that all requirements therefor herein set forth are fully complied with. The ready-mixed concrete plant and all operations pertaining to the production of the concrete shall be subject to the inspection and specific approval of the Engineer. Methods of batching mix constituents shall conform to the requirements set forth above under "Measuring Materials."

Ready-mixed concrete shall be transported to the site in watertight agitator or mixer trucks. The quantity of concrete to be mixed or delivered in any one batch shall not exceed the rated capacity of the mixer or agitator for the respective conditions as stated on the name plates.

Central-mixed concrete shall be plant-mixed a minimum of 1-1/2 min. per batch and then shall be truck-mixed or agitated to minimum of 8 min. Agitation shall begin immediately after the pre-mixed concrete is placed in the truck and shall continue without interruption until discharge. For transit-mixed concrete the major portion of the mixing water shall be added and mixing started immediately after the truck is charged. Mixing (at mixing speed) shall be continued for at least ten minutes, followed by agitation without interruption until discharge. Concrete shall be discharged at the site within 1-1/2 hr. after water was first added to the mix, and shall be mixed at least 5 min. after all water has been added.

Attention is called to the importance of dispatching trucks from the batching plant so that they shall arrive at the site of the work just before the concrete is required, thus avoiding excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms.

Section 4.13 - Remixing Concrete. Concrete which has become compacted or segregated during transportation to or on the site of the work shall be satisfactorily remixed just prior to being placed in the forms.

Partially hardened concrete shall not be deposited in the forms. The retempering of concrete which has partially hardened (that is, the remixing of concrete with or without additional cement, aggregate, or water) will not be permitted.

Section 4.14 - Placing and Compacting Concrete. Unless otherwise permitted, the work shall be so executed that a section begun on any day shall be completed by daylight of the same day.

No concrete shall be placed on frozen subgrade or in water, or until the subgrade, forms, and preliminary work have been approved. No concrete shall be placed until all materials to be built into the concrete have been set and have been approved by the various trades and the Engineer. All such materials shall be thoroughly clean and free from rust, scale, oil, or any other foreign matter.

Forms and excavations shall be free from water and all dirt, debris, and foreign matter when concrete is placed. Except as otherwise directed wood forms and embedded wood called for or allowed shall be thoroughly wetted just prior to placement of concrete.

Concrete placed at air temperatures below 40 deg. F. shall have a minimum temperature of 60 deg. F. when placed.

Concrete shall be transported from the mixer to the place of final deposit as rapidly as practicable and by methods which will prevent separation of ingredients and avoid rehandling.

Chutes for conveying concrete shall be metal or metal-lined and of such size, design, and slope as to ensure a continuous flow of concrete without segregation. The slope of chutes shall be not flatter than 1 on 2 and all parts of a chute shall have approximately the same slope. The discharge end of the chute shall be provided with a baffle, or, if required, a spout, and the end of the chute or spout shall be kept as close as practicable to, but in no event more than 5 ft. above, the surface of the fresh concrete. When the operation is intermittent, the chute shall discharge into a hopper.

For any one placement, concrete shall be deposited continuously in layers of such thickness, that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams and planes of weakness within the section, and so as to maintain, until the completion of the unit, an approximately horizontal, plastic surface.

No wooden spreaders shall be left in the concrete.

During and immediately after being deposited, concrete shall be thoroughly compacted by means of suitable tools and methods such as internal-type mechanical vibrators operating at not less than 5,000 rpm., or other tool spading, to provide the required density and quality of finish.

The concrete shall be thoroughly rodded and tamped about embedded materials so as to secure perfect adhesion and prevent leakage. Care shall be taken to prevent the displacement of such materials during concreting.

Section 4.15 - Bonding Concrete at Construction Joints. In order to secure full bond at construction joints, the surfaces of the concrete already placed, including vertical and inclined surfaces, shall be thoroughly cleaned of foreign materials and laitance, if any; roughened with suitable tools such as picks, wire brushes, etc.; and recleaned by a stream of clean water or compressed air. The old concrete at the joint shall be saturated with water shortly before the new concrete is to be deposited. After free or glistening water disappears, the old concrete shall be given a thorough coating of neat cement grout mixed to a plastic consistency. The coating shall be at least 1/8 in. thick on vertical surfaces and 1/4 in. thick on horizontal surfaces, and shall be well scrubbed in by means of stiff bristle brushes wherever possible. New concrete shall be deposited before the neat cement dries.

Section 4.16 - Curing and Protection. All concrete work shall be protected against damage from the elements and defacement of any nature during construction operations.

Water shall not be permitted to rise on concrete within 24 hr. after it is placed, nor shall running water be allowed to flow over completed concrete within 4 days after it has been placed.

All concrete, particularly slabs and including finished surfaces, shall be treated immediately after concreting or cement finishing is completed to provide continuous moist curing for at least 7 days, regardless of the adjacent air temperature. Walls and vertical surfaces may be covered with continuously saturated burlap, or kept moist by other approved means. Horizontal surfaces, slabs, etc., shall be ponded to a depth of 1/2 in. wherever practicable, or kept continuously wet by use of lawn sprinklers or a complete covering of continuously saturated burlap, or by other approved means.

For at least 7 days after having been placed, all concrete shall be so protected that the temperature at the surface will not fall below 50 deg. F. The methods of protecting the concrete shall be as specified in Section XVIII of the General Provisions of the Specifications and shall be subject to approval.

No manure, salt, or other chemicals shall be used for protection.

The above-mentioned 7-day periods may be reduced to 3 days in each case if high-early-strength cement is used in the concrete.

Wherever practicable, finished slabs shall be protected from the direct rays of the sun to prevent checking and crazing.

Section 4.17 - Trimming and Repairs. It is the intent of this specification to require forms, mixture of concrete, and workmanship so that concrete surfaces, when exposed, will require no patching.

As soon as the forms have been stripped and the concrete surfaces exposed, fins and other projections shall be removed, recesses left by the removal of form ties shall be filled, and surface defects which do not impair structural strength shall be repaired.

Defective concrete shall be cut normal to the surface until sound concrete is reached, but not less than 1 in. deep. The remaining concrete shall be thoroughly roughened and cleaned. Concrete around the cavity or the form-tie recess shall be thoroughly wetted and promptly painted with a 1/16-in. brush coat of neat cement grout mixed to the consistency of heavy cream. The hole shall then be filled with mortar.

Mortar shall be a 1:1-1/2 cement and sand mix with sufficient white cement or fine limestone screenings in lieu of sand, to produce a surface matching the adjoining work. Cement and sand shall be from the same sources as in the parent concrete.

For filling form-tie recesses, the mortar shall be mixed slightly damp to the touch (just short of "balling"), hammered into the recess until it is dense and an excess of paste appears on the surface, and then troweled smooth. Mortar in patches shall be applied so that after partial set it can be compressed and rubbed to produce a finish flush and uniform in texture with the adjoining work. All patches shall be warm-moist cured as above specified.

The Contractor shall be responsible for the adherence of mortar used in repairing concrete. He shall prepare the cavity and apply the repair material in such manner that this end may be attained. Unless specifically otherwise required, mortar shall not be applied as a coating or plastering over the surfaces, but each void shall be individually filled.

The use of mortar patching as above specified shall be confined to the repair of small defects in relatively green concrete. If substantial repairs are required, the defective portions shall be cut out to sound concrete and the masonry replaced by means of a cement gun, or the masonry shall be taken down and rebuilt, all as the Engineer may decide or direct.

Section 4.18 - Concrete Finish. The top surface of all concrete aprons and slabs shall be brought to a true, even surface to the elevations shown on the

Drawings. Wood screeds shall be set at frequent intervals to permit the use of a long straight edge. After screeding such surfaces shall be floated with a wood float.

Exposed surfaces of concrete sidewalls shall be finished after the removal of forms, by cutting back all form ties, pointing up all voids with a 1:2 cement morter and rubbing with a carborundum stone to remove all joint marks, bellies, projections and loose material.

Section 4.19 - Forms. Forms shall be used for all concrete work including footings, except as otherwise permitted. Forms shall be so constructed and placed that the resulting concrete will be of the shape, lines, dimensions, and to the elevations indicated on the drawings or specified, and exposed concrete will be substantially free from board or grain marks, poorly matched joints, and other irregularities or defects.

Forms shall be made of wood, metal, or other approved material. Wood forms shall be constructed of sound lumber or plywood of suitable dimensions, free from knotholes and loose knots; where used for exposed surfaces, boards shall be dressed and matched. Plywood shall be sanded smooth and fitted with tight joints between panels. Metal forms shall be of an approved type for the class of work involved and of the thickness and design required for rigid construction.

Suitable molding or bevels shall be placed so as to produce a 3/4-in. chamfer on all exposed projecting corners.

Forms shall be sufficiently rigid to prevent displacement or sagging between supports, and so constructed that the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for their adequacy.

All forms shall be oiled before reinforcement is placed, with an approved nonstaining oil or liquid form coating.

Before form material is re-used, all surfaces that are in contact with the concrete shall be thoroughly cleaned, all damaged places repaired, and all projecting nails withdrawn.

Form ties to be encased in concrete shall not be made of through-bolts or common wire, but shall be of a well-established type, so made and installed as to embody the following features:

a. After removal of the protruding part of the tie, there shall be no metal nearer than 1 in. to the face of the concrete.

b. That part of the tie which is to be removed shall be at least one-half inch in diameter, or, if smaller, it shall be provided with a wood or metal cone 1 in. long placed against the inside of the forms. Cones shall be carefully removed from the concrete after the forms have been stripped.

c. Ties which pass through walls subject to hydrostatic pressure shall be provided with approved waterstops such as tightly fitting washers.

Section 4.20 - Removing Forms. Except as otherwise specifically authorized by

the Engineer, forms shall not be removed prior to reaching the following number of day-degrees*:

Forms for	Day-degrees
Walls and vertical surfaces	100

* Day-degree: total of number of days times average daily air temperature at surface of concrete. For example, 5 days at a daily average temperature of 60 deg. F. equals 300 day-degrees.

Section 4.21 - Measurement and Payment. Under Item 4, all concrete required for the work shall be measured and paid for by the cubic yard in place in accordance with the Drawings or as directed by the Engineer.

No deduction shall be made for the volume of pipes, metal work and like equipment built into concrete work.

The price for Item 4 shall include compensation for furnishing and placing all concrete as herein specified, including forms.

CONCRETE REINFORCEMENT

Item 5

Section 5.1 - General. Under Item 5, the Contractor shall furnish and place all concrete reinforcement as indicated on the drawings or herein specified. Steel bars shall be deformed bars of the shapes and sizes indicated on the Drawings.

Bar sizes designated on the drawings by inch-dimensions and in the ASTM Specifications by number shall be considered as equivalent in accordance with the following tabulation:

Inch Dimension	Number	Inch Dimension	Number
1/4	-	7/8	7
3/8	3	1	8
1/2	4	1 in. sq.	9
5/8	5	1-1/8 in. sq.	10
3/4	6	1-1/4 in. sq.	11

Section 5.2 - Quality. Steel bars shall be newly rolled stock substantially free from mill scale, rust, dirt, grease, or other foreign matter. Bars shall be intermediate grade billet steel conforming to the ASTM Tentative Specifications for Billet-Steel Bars for Concrete Reinforcement, Designation A15-50T.

Section 5.3 - Deformations. Deformations on bars for concrete reinforcement shall conform to the ASTM Tentative Specifications for Minimum Requirements for the Deformations of Deformed Steel Bars for Concrete Reinforcement, Designation A305-50T.

Section 5.4 - Fabricating Reinforcement. Reinforcement shall be accurately formed to the dimensions indicated on the drawings. Stirrups and tie bars shall be bent around a pin having a diameter not less than 2 times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than 6 times the minimum thickness except for bars larger than 1 in. in which case the bends shall be made around a pin of eight bar diameters. All bars shall be bent cold.

Bars shall be shipped to the work with bars of the same size and shape fastened in bundles with metal identification tags giving size and mark securely wired on.

Section 5.5 - Placing Reinforcement. Before being placed in position, reinforcement shall be thoroughly cleaned of loose mill and rust scale, dirt, and other coatings, including ice, that reduce or destroy bond. Where there is delay in depositing concrete after reinforcement is in place, bars shall be reinspected and cleaned when necessary.

Reinforcement shall be accurately positioned as indicated on the drawings, and secured against displacement by using annealed iron wire ties or suitable clips at intersections. Reinforcement shall be supported by concrete or metal supports, spacers, or hangers. Wood blocks, stones, brick chips, etc., shall not be used.

Reinforcement which is to be exposed for a considerable length of time after having been placed shall be painted with a heavy coat of cement grout if required.

Section 5.6 - Measurement and Payment. The weights used in computing the weights of steel per linear foot of the various sizes of bars required shall be the nominal weights adopted in 1934 by the Concrete Reinforcing Steel Institute, as follows:

Size of bar, in.	Wt., lb./ft.	Size of bar, in.	Wt., lb./ft.
1/4 round	0.167	7/8 round	2.044
3/8 "	0.376	1 "	2.670
1/2 "	0.668	1 square	3.400
1/2 square	0.850	1-1/8 "	4.303
5/8 round	1.043	1-1/4 "	5.313
3/4 "	1.502		

The quantity of metal to be paid for under Item 5 shall be the number of pounds actually placed in accordance with the drawings or as ordered. It shall not include any waste metal due either to the nature of the construction or to the fact that the lengths supplied are too long or too short for their purpose. The quantity paid for shall, however, include extra metal in laps where authorized due to the fact that a single bar would be unreasonably long. Should the Contractor use shorter bars than directed, he shall provide the required lap and bear the expense of the extra steel and labor that are required.

Wire mesh called for by the Drawings shall also be paid for under Item 5 and shall be considered as weighing 21 lbs. per 100 sq. ft.

STONE WORK

Item 6

Section 6.1 - Site and Material. This Contractor shall be furnished by the Owner with large-sized Longmeadow Brownstones, in the quantity noted. Such stone is presently located at Blunt Park, Springfield, Massachusetts and ranges in size from 1/2 to 2 cubic yards, with a maximum dimension of eight (8) feet.

This Contractor shall furnish, in the quantity noted, Longmeadow Brownstone rubble, with a maximum dimension of not more than eighteen (18) inches and a minimum dimension of not less than three (3) inches. Such stone shall have large flat broad faces to facilitate setting without mortar or anchors, and shall also be suitable for use as rip rap on the upstream face of the earth embankment.

Section 6.2 - Handling, Transportation and Setting. All stone shall be loaded and transported to the site of the work by the Contractor. Unloading shall be done in such a manner as to minimize breakage of large stones and to facilitate placement in the concrete aprons.

Base course stones of the larger sizes, selected by the Engineer, shall be set into the concrete aprons so as to form a flat bearing course for smaller stones placed above. Placement shall be by means of a crane or similar mechanical equipment to minimize breakage of the stone or damage to the concrete aprons and sidewalls. Rubble stone shall then be placed in an approved manner to create an appearance of a natural stone out-cropping.

No mortar shall be used to bond stones together.

Rubble size stone, with at least one broad flat surface, shall be hand placed on the upstream face of the earth embankment in the area indicated by the Drawings.

Section 6.3 - Cleaning of Stone. After final placement of the stone in the concrete aprons, the exposed surfaces of the larger stone furnished by the Owner shall be brushed with a stiff wire brush to remove all traces of mortar and foreign matter. Washing with acid solution shall not be permitted, except with specific approval of the Engineer.

Section 6.4 - Payment. The unit prices stipulated per cubic yard under Items 6A and 6B shall include purchase of stone not furnished by the Owner, loading, transportation, handling, setting in the areas indicated, and cleaning all as described herein.

Section 6.5 - Measurement. The quantity of stone to be paid for under Items 6A and 6B shall be the number of cubic yards furnished as measured by individual measurements in the case of larger stones furnished by the Owner under Item 6A, and by tonnage of rubble stone furnished under Item 6B.

LOAMING AND SEEDING

Item 7

Section 7.1 - Work Included. In the areas adjacent to the new concrete aprons and sidewalls, the Contractor shall spread on all stripped areas at least 6" of new top soil to the finished grades indicated by the Drawings.

Top soil shall be raked smooth and leveled and seed shall be sown at the rate required of 6 pounds per thousand square feet.

Section 7.2 - Materials. Top soil shall be approved by the Engineer and shall be fertilized with a commercial fertilizer spread evenly at the rate of 40 pounds per thousand square feet.

Lawn seed shall be fresh and clean, composed of the following varieties mixed in proportions and testing as follows:

		Germination
Fancy Red Top	10 parts	90%
Kentucky Blue	50 parts	85%
Chewings New England Fescue	20 parts	85%
Perennial Rye	10 parts	85%
White Dutch Clover	10 parts	85%

Section 7.3 - Payment. Under Item 7 all loaming and seeding required for the work shall be measured and paid for by the cubic yard in place.

Sixteen Acres Pond Dam

1926 Springfield

Located at Sixteen Acres Pond on the north branch of Mill River. Also see: Dam Report Section - Springfield. Springfield City Park System Dam #2.

Abutters	Springfield City Park Department
City/Town	Springfield
Dam	Van Horn Park Upper Dam
Dam	Sixteen Acres Pond Dam
Name	J Stevens Arms Company
Name	Barney & Berry Skate Company
Water	Mill River
Water	Sixteen Acre Pond

This dam belongs to J. Stephen Arms Co
Chicopee Falls

See after dif on P. 82

Page 62 of report

Barnum & Berry Skate Company,
Springfield, Mass.

you are notified that your Mill Pond dam, located on the South Branch of Mill River so called in that part of the City of Springfield known as Sixteen Acres, etc.

"The dam is not in very good condition, and it is recommended that it be repaired, especially at its north end where the old penstock was located."

Now, therefore, etc.

February 24, 1926

Barney & Berry Skate Company,
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your Mill Pond dam, located on the South Branch of Mill River so called in that part of the City of Springfield known as Sixteen Acres, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "The dam is not in very good condition, and it is recommended that it be repaired, especially at its north end where the old penstock was located."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable time.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

March 17, 1926

Roscoe R. Moody, Agent
For Frederick J. Williams, Trustee,
387 Main Street,
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notifiedthat your Mill Pond dam, located on the South Branch of Mill River so-called in that part of the City of Springfield known as Sixteen Acres, has been inspected by our engineer and your attention is called to the following recommendations made by him;

> "The dam is not in very good condition, and it is recommended that it be repaired, especially at its north end where the old penstock was located."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable time.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

November 17, 1926

J. Stephens Arms Co.,
Chicopee Falls,
Mass.

Gentlemen:

In regard to your dam on the outlet of 16 Acre Pond, in Springfield, our Engineer has reported that you have made repairs on this structure but advises that more gravel be placed on the up stream face of the dam at, or towards, its North end where the old penstock was located.

He also advises that the crest be cleared of brush, grass and debris etc.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

C/N

May 10, 1933

City of Springfield Park Dep't.,
Forest Park,
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 176 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located at Sixteen Acre Pond on the North Branch of Mill River in the City of Springfield has been inspected by our engineer and your attention is called to the following condition noted and recommendation made by him;

"Some repairs are needed on this dam, especially on the crest, which should be rebuilt as quite a few of the stones have been dislodged and have fallen into the bed of the brook."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By_____
Chairman.

_____

_____

December 10, 1952

City of Springfield Parks Department
Forest Park
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams throughout the City have been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

" 1. Van Horn Park upper Dam: Leaves and debris were found to be completely blocking the outlet pipe grate. It would be advisable to protect this grate from plugging by the use of baffles at the water surface around the grate structure.

2. Sixteen Acre Dam: Store work at the left crest and left abutment is in need of maintenance and repair. This work should be done to prevent further loss of the structure."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____
Chairman

_____

_____

Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

Office of the
County Commissioners
37 Elm Street

THOMAS F. SULLIVAN
Chairman
WILLIAM F. STAPLETON, Chm.
RALPH P. WALSH

Jan. 23, 1963

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of dams of Hampden County, you are hereby advised that your dam located at the Park, in the Sixteen Acre Section of Springfield, has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Springfield Park Dept. Dam, Sixteen Acres Pond

" The large tree located at the right abutment just beyond the end of the spillway crest should be cut down. If this tree becomes uprooted in a high wind storm, or for any cause whatsoever, damage could occur to the right abutment stone masonry. Some of the stone masonry has been dislodged by root action. Repairs should be made to the dislodged blocks of masonry. At the time of the last inspection, water was passing over the spillway. "

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

January 8, 1964

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to inspection, condition and safety of dams in Hampden County, you are hereby advised that your dam, located in the Park at Sixteen Acres, has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "A large tree, located in the stone work of the right abutment, just downstream of the end of the spillway crest should be cut down. The root structure of this tree is damaging to the stone block masonry of the abutment area. Also, the possibility of the tree being uprooted in a storm could result in the formation of a breach in the abutment masonry.
>
> The removal of this tree has been recommended previously but no action has been taken by the Springfield Park Department."

Your attention to the need for the removal of this large tree was reported in a communication by this Board on Jan. 23, 1963. As of the end of 1963, the tree still remains in place. Removal of this tree should be scheduled in the work of the Parks Dept. for the year 1964.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

January 3, 1968

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to inspections, condition and safety of dams in Hampden County, you are hereby advised that your dam located in the Sixteen Acres section of the City of Springfield has been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him as related to the dams.

"Springfield Park Department Dam, Sixteen Acres Pond

All tree growth in the general area of each abutment has been cut down. Previously, in the report submitted of the last inspection, trees growing from the abutment areas themselves had been removed. However, in connection with major roadway construction adjacent to the dam, much clearing has been done in the vicinity of the dam.

The masonry crest of the dam was found to be okay. It had a good grade and good alignment. No flashboards were on the crest. Water level in storage was down below the crest and the drawdown gate at the right side of the dam was part way open.

The left abutment area in particular has been changed by clearing and construction of the widened roadway leading into the Sixteen Acres section of Springfield.

The stone masonry of the dam leaks at various areas and leakage can be noted emerging from the masonry joints. The downstream face of the masonry dam is in fairly good condition except at the left end where, a few feet below the crest elevation, there is being formed, apparently by erosion, in the face of the dam, a fairly large cavity.

Maintenance work should be done to prevent further extension of this cavity. This repair and maintenance work should be accomplished during 1968."

The Board of County Commissioners concurs in the recommendation of the County Hydraulic Engineer in that repairs should be made so that the cavity mentioned in the report will not become more extensive and thus, more expensive to repair at a later date. Also, extension and enlargement of the cavity through lack of repair and maintenance might endanger the dam. Repairs should be included in the planned work for 1968.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Van Horn Park Dams

1950 Springfield

Two dams located in Van Horn Park. Also see: Dam Report Section - Springfield.

Abutters	Springfield City Parks
Abutters	Van Horn Park
City/Town	Springfield
Dam	Van Horn Park Dams

October 4, 1950

City of Springfield
Park Department
Forest Park
Springfield, Mass.

Attention: Park Commission

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your upper dam located in Van Horn Park has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him:

"The overflow pipe from the pond appears to be plugged, and should be cleaned."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

C O P Y

December 10, 1952

City of Springfield Parks Department
Forest Park
Springfield, Mass.

Gentlemen:-

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams throughout the City have been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

" 1. Van Horn Park upper Dam: Leaves and debris were found to be completely blocking the outlet pipe grate. It would be advisable to protect this grate from plugging by the use of baffles at the water surface around the grate structure.

2. Sixteen Acre Dam: Store work at the left crest and left abutment is in need of maintenance and repair. This work should be done to prevent further loss of the structure."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

_____

_____

March 13,1957

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with Chapter 253 of the General Laws of the Commonwealth of Massachusetts, all dams in the city of Springfield have been inspected by the County Hydraulic Engineer and a report of his inspection of each dam has been submitted to our Board. Among the dams inspected were the two dams forming the Upper Pond and the Lower Pond at Van Horn Park.

The type of spillway at the Upper Van Horn Park Dam is such that its capacity does not seem adequate to handle the runoff from a storm that could be expected at some future date on the drainage area above the dam. Also, the overflow is built in such a manner that plugging of the tube or the inlet could materially reduce its capacity and thus cause a dangerous increase in the level of the stored water. It is recommended that consideration be given to a study of this dam for the purpose of providing a suitable spillway that will have adequate capacity based upon the drainage area involved and the greatest storm that can be expected on the drainage area. Steps should be taken to provide this type of spillway as soon as possible.

In connection with your Lower Dam, it is our understanding that a study is now being made regarding this dam to provide any necessary additions, alterations, or changes to make the structure safe and to eliminate any danger to persons and property downstream that would result from failure of the Lower Dam under any possible conditions or depth of water storage.

In order that we may be aware of any planned changes on either of these two dams, we would appreciate receiving information as to whether or not a study is actually being made and what the scope of this study is to include.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

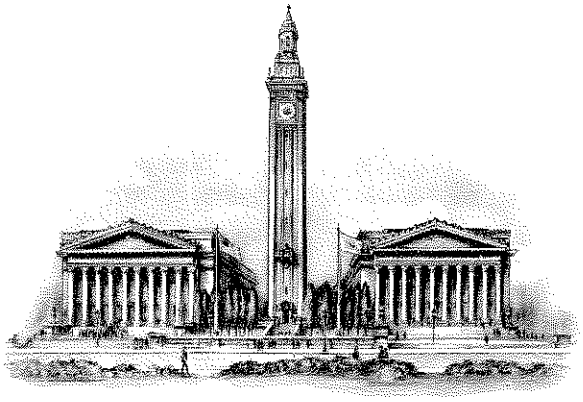
_____

_____

BOARD OF PARK COMMISSIONERS

EDWARD J. O'BRIEN, CHAIRMAN
THOMAS A. QUINN, SECRETARY
WILLIAM J. WENK
DAVID A. GOGGIN
WILLIAM LIEBERMAN

THEODOR R. GEISEL, SUPERINTENDENT



DEPARTMENT
OF
PUBLIC PARKS

THE CITY OF
SPRINGFIELD, MASSACHUSETTS

March 21, 1957

Hampden County Commissioners
37 Elm Street
Springfield, Massachusetts

Gentlemen:

At a meeting of the Board of Park Commissioners held March 19 your two letters of March 13 were received.

At the same meeting a letter was received from the Department of Streets & Engineering for the approval of the Park Commission of detailed plans for flood control measures in Van Horn Park. The Board approved this project and forwarded a copy of your letter to Mr. James J. Sullivan of the Street Department.

Pertaining to repairs needed to the masonry of the Porter Lake dam, it is intended to do this work during this year.

Very truly yours,

Theo. R. Geisel

Superintendent

TRG:ifg

Copy of this letter mailed to George H. McDonnell, County Hydraulic Engineer, on March 25, 1957.

Feb. 5, 1956

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dams located at Van Horn Park have recently been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Van Horn Park Upper Dam

This is an earth embankment in Van Horn Park that carries the public street. The spillway at the dam situated on the northerly end has a catch basin type of grate inlet. This type of inlet is good from the viewpoint of preventing entry of debris into the pipeline. However, the opening is so restricted that water ponds above the opening whenever heavy flows occur or debris partially blocks the grate. Consideration should be given to improving the spillway capacity and it is advisable that definite steps be taken at once on this matter.

Van Horn Park Lower Dam

This dam is located downstream of the structure just described and is not too far distant northeasterly of the Springfield Hospital. This dam prior to 1909 was a source of water supply for the City of Springfield. At that time, the pond when filled covered an area of about 16 acres and had a capacity of 100 million gallons more or less. For many years the water level in the pond behind the dam has been maintained considerably below the top of the dam and consequently the pondage at the present time is quite small. The dam is an earth embankment about 800 ft. long and nearly 40 ft. high. The top width is approximately 17 ft. Thru the embankment a 12" iron drainpipe and an overflow pipe extend from a stone masonry gate well located in the pond at the upstream toe of the dam. There is no surface overflow or spillway in connection with this structure. In the flood of August, 1955, no damage occurred at this pond.

It is my understanding that the Park Department was to have a study made regarding this dam. I am not aware of the results of any study that may have been made. In any event consideration should be given to providing an adequate spillway for this dam in addition to existing spillway facilities. Failure of the present dam at a time when it is impounding a large volume of water could result in a vast amount of damage occurring downstream in the densly built up area of Springfield.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

_____

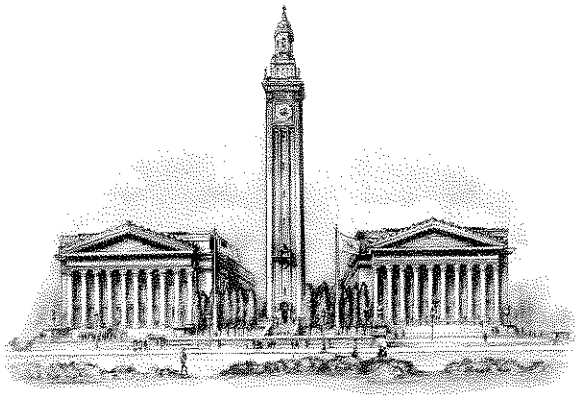
_____

_____

BOARD OF PARK COMMISSIONERS

THOMAS A. QUINN, CHAIRMAN
DAVID A. GOGGIN, SECRETARY
EDWARD J. O'BRIEN
WILLIAM J. WENK
ROMEO J. CYR

THEODOR R. GEISEL, SUPERINTENDENT



THE CITY OF
SPRINGFIELD, MASSACHUSETTS

DEPARTMENT OF PUBLIC PARKS

December 17, 1958

Board of County Commissioners
37 Elm Street
Springfield, Mass.

Gentlemen:

At a meeting of the Board of Park Commissioners held December 15, 1958, your letter of December 3, was received relative to the inspection as to conditions and safety of dams in Forest Park and Van Horn Park.

The Board has been informed by our Mr. Wells that the State has agreed to build adequate spillways at the lower Van Horn dam.

Request for funds for work at the Upper Forest Park dam has been included in the 1959 budget and the removal of vegetation in the Middle dam can be done by our men without difficulty.

Very truly yours,

L F Rourty

Assistant Superintendent

FLP/lch

Copy of this letter mailed December 19, 1958 to George H. McDonnell, County Hydraulic Engr., Holyoke, Mass.

Dec. 24, 1958

City of Springfield
Forest Park Office
Springfield, Mass.

Att: L. S. Prouty, Asst. Supt.

Gentlemen:

Reference is made to your letter of December 17, 1958, pertaining to dams in Forest Park and Van Horn Park.

In the second paragraph, you state that your Mr. Wells has informed your Board that the Commonwealth of Massachusetts has agreed to build adequate spillways at the lower Van Horn Dam.

In this connection, we call your attention to Chapter 253, of the General Laws pertaining to the safety of reservoirs and dams. Before any work is to be done on any reservoir or dam, the plans and specifications of the work as proposed must be filed with and approved by the County Commissioners of the County wherein the dam is situated. The law requires that the County Commissioners retain and record such plans and specifications.

According to our records, no plans and specifications have been filed and consequently, no work should proceed until such plans and specifications are filed and approved. This is not a matter of County rules and ordinances but is a matter of the requirements of Chapter 253 of the General Laws of the Commonwealth of Massachusetts.

If you have any question in connection with the necessary steps that must be taken in order to comply with this General Law, kindly contact either this Board or the County Hydraulic Engineer, George H. McDonnell whose office is at Bowers & Pequot Streets in Holyoke. He may be reached by telephoning Holyoke, JEfferson 3-3991. If there is any other information desired in connection with this matter, please do not hesitate to contact this Board.

Very truly yours,
BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Dec. 3, 1958

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dams located at Forest Park and at Van Horn Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Forest Park Middle Dam Vegetation growing from underneath the capstones of the spillway, particularly on the north side, should be removed and killed. This growth is causing movement of the capstones. This condition has been reported previously and no action has been taken to correct this condition. Failure to correct the condition can result in more expensive repairs at a later date. Protective maintenance should be done now.

Forest Park Upper Dam The embankment of this dam is satisfactory. The spillway is still in need of maintenance and repair to the masonry that is spalling and eroding. The condition appears to be getting worse and corrective action should be taken. Vegetation growing from the stone masonry should be killed. This condition has been reported before and to date, no steps have been taken to do any corrective maintenance.

Van Horn Park Upper Dam This dam was found to be in satisfactory condition. The spillway inlet was free of leaves and debris. As recommended many times previously, a better spillway arrangement should be provided or an auxiliary spillway constructed to work in conjunction with the existing spillway tube and inlet.

Van Horn Park Lower Dam The same general condition still exists as reported previously. Consideration should be given to providing an adequate spillway for this dam in addition to the existing spillway

facilities. Failure of the present dam at a time when it is impounding a large volume of water could result in a vast amount of damage occurring downstream in the densely built-up area of Springfield.

Construction work is going on downstream of the toe of the dam. It appears as if a drainage project is being built. Construction equipment has been on top of the dam and on the downstream slope of the dam. Damage has been done to the face of the dam embankment as a result of the crawler treads of this equipment running on the top and face of the dam.

If the construction work now going on is related to the dam, plans and specifications should be filed for review and approval. To date, the undersigned knows of no plans or specifications that have been submitted for any work that might be done to improve the dam or its facilities."

In connection with the dams at Forest Park, your attention is called to the fact that the recommendations contained herein have been submitted previously. Corrective action taken in the immediate future can prevent the need for more expensive maintenance later on.

The recommendations contained in the report of the Engineer on the Van Horn Park Upper and Lower Dams are in general the same recommendations previously submitted. Your attention is called to the construction work being carried on below the dam. If this work is related to the dam and alters in any way the dam, the spillway or any related facilities, plans and specifications of the work must be filed with the County and the plans approved before any work is accomplished.

Any further information concerning this matter which you may desire, will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

CD Springfield

July 14, 1959

Green Engineering Affiliates, Inc.
84 State Street
Boston 9, Mass.

Gentlemen:

Reference is made to the construction work being carried on at the outlet works to the lower reservoir at Van Horn Park in Springfield, Mass. An inspection was conducted this date, of the work going on in connection with embankment shaping and backfill. The undersigned observed a clam shell digging backfill material for the embankment from a stock pile and depositing this material in a normal drop manner into the embankment. It was estimated at the time of my visit to the job, at about 3:00 P.M. this date, that from four to five feet of loose backfill had been placed and that absolutely no compaction had been practiced. Instead of replacing the excavated embankment in layers and compacting each layer, the contractor was replacing the embankment in a narrow vertical fill that did not extend out to either the upstream or downstream embankment face. I assume that if filling had continued, there would not only be a lack of compaction but there would be planes of weakness where other vertical fills joined the fill I observed being placed.

No inspector was at the site of the work during this critical embankment placing. I understand that the inspector involved has other work to cover and naturally cannot be on all jobs at the same time.

I am of the opinion that embankment placing is an important item and should be inspected continuously if at all possible.

In addition to loose fill being placed in the embankment I observed organic material in the way of small branches, clumps of sod, fairly large roots, etc.

I directed the equipment operator to cease placing material in the manner being practiced and directed that the material in place be dug out and that embankment material be set in place in accordance with good and proper engineering practice.

Will you kindly direct the contractor and all responsible personnel to place the embankment material in a proper fashion as is customary in building earth dams.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb
cc: County Commissioners

CD Springfield

July 14, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
31 Elm Street
Springfield, Mass.

Gentlemen:

A recent inspection of the work being carried on at Van Horn Park Dam in Springfield revealed that earth embankment construction was not being carried on in accordance with good engineering practice. I have written to the engineering firm responsible for the design and the supervision of construction on this work and enclose herewith a copy of my communication to that firm. The contents of the communication are self-explanatory. I thought it advisable for you to have a copy of this letter for any future reference.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Enc.

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield

July 14, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
31 Elm Street
Springfield, Mass.

Gentlemen:

A recent inspection of the work being carried on at Van Horn Park Dam in Springfield revealed that earth embankment construction was not being carried on in accordance with good engineering practice. I have written to the engineering firm responsible for the design and the supervision of construction on this work and enclose herewith a copy of my communication to that firm. The contents of the communication are self-explanatory. I thought it advisable for you to have a copy of this letter for any future reference.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Enc.

Green Engineering Affiliates, Inc. · ENGINEERS

84 STATE STREET · BOSTON 9, MASS.
Telephone: LAfayette 3-1706

G D

July 15, 1959

Mr. George H. McDonnell
County Hydraulic Engineer
c/o Tighe & Bond
Bowers & Pequot Streets
Holyoke, Massachusetts

Dear Mr. McDonnell:

Subject: Proposed Outlet Works
Van Horn Park
Springfield, Massachusetts

We have received your letter of July 14 and will comply with its contents. We appreciate the promptness of your report.

Our inspector has been directed to devote full time to the project for as long as may be required.

Very truly yours,

GREEN ENGINEERING AFFILIATES, INC.

R. E. Crawford

R. E. Crawford
Vice President

REC:mo'd

CC: Wm. Small, Resident Engineer

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield

July 20, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

In connection with my recent communication to Green Engineering Affiliates, Inc., Engineers on the construction of dam improvements at Van Horn Park, please find a copy of their letter sent to me in connection with my complaint regarding compaction of the dam embankment. The contents of the letter are self-explanatory.

Very truly yours,

Tighe & Bond, Inc.

George H. McDonnell
Chief Engineer
County Hrdraulic Engineer

GHM/mb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
Oct. 26, 1959

Board of County Commissioners
Hampden County Court House
Elm St.
Springfield, Mass.

Gentlemen:

Reference is made to the heavy rain that occurred on Saturday, Oct. 24, 1959, and to some damage that occurred at the Van Horn Park dam reconstruction project. The downstream dam at Van Horn Park had been rebuilt prior to the heavy rain. Damage did occur to the newly grassed and graded embankment. This is of a minor nature and can be repaired by the contractor. The repairs to this embankment will be discussed today with the engineering inspector on the job.

At the upstream dam, where the public street forms the embankment, the new spillway under and across the street was under construction. The downstream half had just been recently constructed. During the heavy rain runoff broke thru the construction area and the concrete chute of the spillway was undermined to some extent. An examination of this chute following the storm indicates that some work will be necessary to correct the washout of soil under the chute itself. This matter will also be discussed with the engineering representative on the job.

Throughout the storm on Saturday and continuing into Sunday, the undersigned made inspections at various dams throughout the County. No other damage of any consequence was noted other than that described herein and the damage at Alden Pond in Ludlow, described in a separate communication. There may have been other damage at structures not yet visited. However, reports on damage of this nature will probably be received from time to time during the coming week. I doubt, however, that any other damage of any consequence occurred throughout the County.

Rainfall in the Holyoke area for the storm, including Friday night and Saturday was about 4.23 inches. Of this total fall, about 3.27 inches fell from late Saturday morning until around 5:30 Saturday afternoon. Thus, the major

TIGHE & BOND *CONSULTING ENGINEERS*

CD
Springfield
Oct. 26, 1959

portion of the storm was concentrated in the few hours from noontime till the latter part of the afternoon.

I received a call in connection with the overflowing of Willimansett Brook in Willimansett. Mr. Trembley of Trembley Co., Inc., complained of high water doing thousands of dollars worth of damage to his machinery and equipment, as well as scattering drums and barrels throughout the area of his barrel storage yard. Mr. Trembley called hoping that some action could be taken to require the Hampden Brewing Company to open the gates at their dam to aid in passing water faster from Willimansett Brook to the Connecticut River. At the time Mr. Trembley called I was out making inspections throughout the County and did not receive his call until I returned to my office at about 7:00 p.m. On investigating conditions in Willimansett I found that though the Willimansett Brook was flowing very high, the problems related to high water were diminishing. I talked with Mr. Trembley via phone and pointed out to him that, in my opinion, the County could take action on a dam if its condition endangered persons and property downstream. However, if during flood times an owner of a dam did not wish to open his drawdown gates, I did not know how the County could force him to open these gates unless conditions at his dam were such that persons and property downstream were being endangered.

I have another conference scheduled with Mr. Tremblay on Tuesday, Oct. 27. I will make a report to your Board on this conference.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/f

CD Springfield

Oct. 27, 1959

Green Engineering Affiliates, Inc.
84 State Street
Boston, Mass.

Re: Spillway at Upper Dam
Van Horn Park
Springfield, Mass.

Gentlemen:

Reference is made to the above subject project and damage done to the foundation of the spillway chute during the heavy storm runoff on Saturday afternoon, October 24, 1959. An examination of this spillway chute shows that water broke thru the construction area and washed soil adjacent to and under the concrete floor of this structure. I discussed the matter with Mr. Small, your Resident Engineer on this date.

I am of the opinion that cavities under the spillway chute may be quite extensive and consequently, a thorough investigation of the foundation should be made before any repair work is started. I suggested to Mr. Small that exploratory excavations be made beside the chute and then under the chute to locate possible cavities. Soft and washed foundation soil should be removed and all cavities thus formed and formed by the storm should probably be filled with mass concrete.

Mr. Small feels that there are cavities under the foundation.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

CD Springfield

Oct. 27, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Enclosed for your information and file purposes, please find a copy of a communication sent to the engineering firm in charge of the design and construction of new spillway facilities at Van Horn Park Upper Dam in Springfield. The heavy rain storm of October 24, 1959, washed out soil from under the new spillway chute. I feel that this condition should be thoroughly investigated and proper corrective action taken. This is pointed out to the Engineer in my communication. The contents of the letter are self-explanatory.

Respectfully submitted,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Enc.

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield

Oct. 27, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Enclosed for your information and file purposes, please find a copy of a communication sent to the engineering firm in charge of the design and construction of new spillway facilities at Van Horn Park Upper Dam in Springfield. The heavy rain storm of October 24, 1959, washed out soil from under the new spillway chute. I feel that this condition should be thoroughly investigated and proper corrective action taken. This is pointed out to the Engineer in my communication. The contents of the letter are self-explanatory.

Respectfully submitted,

George H. McDonnell
County Hydraulic Engineer

GHM/mb

Enc.

xxxxxx
, Chm

Jan. 23, 1963

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams in Hampden County, you are hereby advised that your two dams located at Van Horn Park and the three dams located at Forest Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Van Horn Park Upper Dam

"Conditions at this dam were the same as those reported a year ago. The embankment was found to be satisfactory. The lower section of the spillway chute shows very little evidence of any further settlement. It is possible that water may work its way under the floor near the joint at the upper end of the lower masonry section. Should this occur, further settlement of the chute may take place. This condition will be closely observed with each passing year to see if repairs are ever needed.

The sidewalk slabs running longitudinally along the top of the dam, at the downstream side of the structure, have been greatly undermined. Further undermining could result in the collapse of the sidewalk slabs and possible injury to pedestrians using the sidewalk. Though this condition has no bearing on the safety of the dam, it probably should be called to the attention of the City officials so that the sidewalk can be properly repaired. Though attention to this condition was pointed out over a year ago, it would be well to again bring it to the attention of City officials.

Exposed reinforcing rods in the underside of the roof at the inlet end of the conduit, reported for the past two years, should be protected by either being coated with paint of cement grout."

Van Horn Park Lower Dam

"The embankment at this structure needs treatment of the surface to promote a good growth of sod. The spillway tube thru the embankment seems to have changed shape at about the core section. There was poor grade alignment of this structure when it was built, both as to the invert and the roof. This misalignment appears to have increased in the past year. It would be well to have the Owner check it from time to time to be certain that there is no minute change taking place in the shape of this structure. At the outlet chamber downstream of the spillway tube, a variety of junk and debris has collected at the inlet to the storm drain. If this material is not removed, it could move into the drain and greatly reduce the capacity of the pipeline. In time of extreme flood flow conditions the capacity of the drain might be reduced sufficiently to cause flooding on the surface of the ground and damage to property downstream."

Forest Park Lower Dam

"This dam was found to be in satisfactory condition. The abutment areas were OK and the spillway was in good shape."

Forest Park Middle Dam

"The stone masonry of the spillway is in need of repair. Concrete division walls in the conduit carrying the water from the spillway under the roadway embankment are in need of repair. The concrete is eroded away to a point where the reinforcing steel is dangerously exposed. This condition has been reported previously to the Springfield Park Commission. It should be reported again and the potential seriousness of the existing conditions brought to the attention of the Park Commission once more."

Forest Park Upper Dam

"Capstones at the right end of the spillway have fallen off as predicted in the report of a year ago. More damage will be done to the spillway of this dam unless needed maintenance is done in the immediate future. For some time the fact that this dam is deteriorating has been pointed out to the officials of the Park Department. Nothing has been done as yet in the way of maintenance to prevent further deterioration. Unless maintenance is done now, more serious and costly repairs will be required in the near future and it is possible that more sections of the stone masonry of the dam will fail. The embankment of the dam is satisfactory. The spillway tube passing thru the embankment under the road should be checked thoroughly and repaired as needed."

[illegible] recommendations to our Board

for a number of years regarding certain needed maintenance at these various dams under your control and jurisdiction. We have passed on his recommendations to you and amplified them with our own general comments regarding the desirability of maintaining dams in good condition.

At the Upper Dam in Forest Park, it was pointed out last year that repairs to the spillway should be done as soon as possible, since failure to make repairs would result in the loss of capstones on the spillway. You will note in the report of the County Hydraulic Engineer that capstones now have been lost from the spillway. Deterioration of concrete in the conduit structure under the roadway is reaching serious proportions at the Middle Dam in Forest Park.

At Van Horn Park, failure of the undermined sidewalk slabs could cause unnecessary serious injury to some pedestrian. At the Lower Dam at Van Horn Park, debris collected in the outlet structure at the head of the drainpipe could be washed into the drainpipe or even simply plug the opening to the drain to result in a major decrease in the carrying capacity of the structure and the possible flooding of public and private property in time of heavy storm runoff.

All of the recommendations contained in the report this year have been made time and time again in the past. To delay action in connection with needed maintenance could result in serious damage to persons and property.

Your Commission is urged to investigate the various conditions as outlined in the report and to take the necessary corrective action during the year 1963.

Any further information concerning these matters which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

Office of the
County Commissioners
37 Elm Street

THOMAS F. SULLIVAN
~~XXXXXX~~
WILLIAM F. STAPLETON, Chm
RALPH P. WALSH

Jan. 23, 1963

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams in Hampden County, you are hereby advised that your two dams located at Van Horn Park and the three dams located at Forest Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Van Horn Park Upper Dam

"Conditions at this dam were the same as those reported a year ago. The embankment was found to be satisfactory. The lower section of the spillway chute shows very little evidence of any further settlement. It is possible that water may work its way under the floor near the joint at the upper end of the lower masonry section. Should this occur, further settlement of the chute may take place. This condition will be closely observed with each passing year to see if repairs are ever needed.

The sidewalk slabs running longitudinally along the top of the dam, at the downstream side of the structure, have been greatly undermined. Further undermining could result in the collapse of the sidewalk slabs and possible injury to pedestrians using the sidewalk. Though this condition has no bearing on the safety of the dam, it probably should be called to the attention of the City officials so that the sidewalk can be properly repaired. Though attention to this condition was pointed out over a year ago, it would be well to again bring it to the attention of City officials.

Exposed reinforcing rods in the underside of the roof at the inlet end of the conduit, reported for the past two years, should be protected by either being coated with paint of cement grout."

Van Horn Park Lower Dam

"The embankment at this structure needs treatment of the surface to promote a good growth of sod. The spillway tube thru the embankment seems to have changed shape at about the core section. There was poor grade alignment of this structure when it was built, both as to the invert and the roof. This misalignment appears to have increased in the past year. It would be well to have the Owner check it from time to time to be certain that there is no minute change taking place in the shape of this structure. At the outlet chamber downstream of the spillway tube, a variety of junk and debris has collected at the inlet to the storm drain. If this material is not removed, it could move into the drain and greatly reduce the capacity of the pipeline. In time of extreme flood flow conditions the capacity of the drain might be reduced sufficiently to cause flooding on the surface of the ground and damage to property downstream."

Forest Park Lower Dam

"This dam was found to be in satisfactory condition. The abutment areas were OK and the spillway was in good shape."

Forest Park Middle Dam

"The stone masonry of the spillway is in need of repair. Concrete division walls in the conduit carrying the water from the spillway under the roadway embankment are in need of repair. The concrete is eroded away to a point where the reinforcing steel is dangerously exposed. This condition has been reported previously to the Springfield Park Commission. It should be reported again and the potential seriousness of the existing conditions brought to the attention of the Park Commission once more."

Forest Park Upper Dam

"Capstones at the right end of the spillway have fallen off as predicted in the report of a year ago. More damage will be done to the spillway of this dam unless needed maintenance is done in the immediate future. For some time the fact that this dam is deteriorating has been pointed out to the officials of the Park Department. Nothing has been done as yet in the way of maintenance to prevent further deterioration. Unless maintenance is done now, more serious and costly repairs will be required in the near future and it is possible that more sections of the stone masonry of the dam will fail. The embankment of the dam is satisfactory. The spillway tube passing thru the embankment under the road should be checked thoroughly and repaired as needed."

The County Hydraulic Engineer has made recommendations to our Board

for a number of years regarding certain needed maintenance at these various dams under your control and jurisdiction. We have passed on his recommendations to you and amplified them with our own general comments regarding the desirability of maintaining dams in good condition.

At the Upper Dam in Forest Park, it was pointed out last year that repairs to the spillway should be done as soon as possible, since failure to make repairs would result in the loss of capstones on the spillway. You will note in the report of the County Hydraulic Engineer that capstones now have been lost from the spillway. Deterioration of concrete in the conduit structure under the roadway is reaching serious proportions at the Middle Dam in Forest Park.

At Van Horn Park, failure of the undermined sidewalk slabs could cause unnecessary serious injury to some pedestrian. At the Lower Dam at Van Horn Park, debris collected in the outlet structure at the head of the drainpipe could be washed into the drainpipe or even simply plug the opening to the drain to result in a major decrease in the carrying capacity of the structure and the possible flooding of public and private property in time of heavy storm runoff.

All of the recommendations contained in the report this year have been made time and time again in the past. To delay action in connection with needed maintenance could result in serious damage to persons and property.

Your Commission is urged to investigate the various conditions as outlined in the report and to take the necessary corrective action during the year 1963.

Any further information concerning these matters which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

January 8, 1964

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to inspections, condition and safety of dams in Hampden County, you are hereby advised that your two dams, located at Van Horn Park have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

Van Horn Park Upper Dam

" This dam was found to be in the same general condition as reported in 1962. The embankment was satisfactory. The lower section of the spillway chute appears to have settled a bit more but there is no sign of the overflowing water working its way thru the joints and under the masonry. The condition will be observed annually and if and when corrective action is deemed advisable, a recommendation will be made in connection therewith.

Sidewalk slabs running longitudinally along the top of the dam embankment on the downstream side of the fill have been greatly undermined.

Undermining seems to have extended from conditions noted a year previously. Eventually, the sidewalk slabs will collapse and it is possible any pedestrian walking on the slabs at the time of collapse will be injured. Though this condition has no bearing on the safety of the dam, it should be called again to the attention of the City officials, so that the sidewalk can be properly repaired.

Exposed reinforcing rods in the underside of the roof at the inlet end of the conduit should be protected by either being coated with paint or cement grout."

Van Horn Park Lower Dam

"The spillway tube was in about the same condition as reported previously. Though misalignment of the tube appeared to have increased at the time of the inspection a year ago, no change in the misalignment was noted this year. At the toe of the spillway tube and where the entrance to the major drain exists, much debris was noted in the masonry basin structure. Debris consists of a chair, miscellaneous pieces of wood and general junk of all sorts. Any of these materials could be washed into the main drain, flood the drain completely or in part and result in overflowing of flood waters onto property downstream. This condition has no effect on the safety of the dam but should be called to the attention of the Owner so that the basin can be cleaned periodically.

The earth embankment is in fair condition but needs shaping, particularly in the vicnity of the discharge tube and on the downstream face, directly above the tube. A good growth of sod should be promoted on the embankment and all eroded and worn surfaces should be repaired.

The toe area of the embankment was found to be satisfactory. The upstream face of the dam embankment was in poor condition. The spillway inlet structure in the pond was found to be satisfactory. Water level in storage was at the low level inlet of the structure."

The condition of the sidewalk slabs on the top of the embankment at the Upper Van Horn Park dam has been called to the attention of your Board in the past. With further extension of the undermining, it is only a matter of time before the sidewalk slabs break and fall. It will indeed be a shame if some pedestrian, walking on the sidewalk of the embankment happens to be on these slabs as they collapse. Adequate warning and advice in connection with needed repairs has been passed on to you in the past. Failure of the slabs will not endanger the dam but persons can become injured as pointed out herein, because of the slab failure, should a pedestrian be on the sidewalk at the moment of collapse.

If the repairs of this undermined condition is not within your jurisdiction, please notify the proper Department within the City of Springfield so that repairs can be made.

The surface of the earth embankment at the Lower Dam, particularly

the downstream face in the vicinity of the conduit, is in very poor condition. The face of the embankment should be properly graded, stabilized and then seeded and fertilized. The work of improving this embankment and bringing it to satisfactory grade and alignment should be planned in 1964.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

December 16, 1964

Springfield Park Commission
Public Parks Department
Forest Park Office
Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to inspections, condition and safety of dams in Hampden County, you are hereby advised that your two dams located at Van Horn Park have been inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him as related to the lower of these two dams.

Van Horn Park Lower Dam

"This dam was also found to be in the same general condition as reported previously. The embankment is rough on the surface and has a number of eroded areas that should be filled, graded and then loamed and seeded. A good growth of turf should be promoted on the surface of the entire embankment and all large trees and brush growth cut.

The spillway tube thru the embankment was found to be satisfactory as was the inlet structure.

At the discharge end of the spillway tube in the entrance structure to the major drain there were many miscellaneous items of debris that could be washed into the drain to either plug it or greatly reduce its flow capacity. This condition has no effect on the safety of the dam but again, as in the report of a year ago, the condition should be called to the attention of the Owner so that the basin can be cleaned."

The surface of the earth embankment at the lower dam, particularly on the downstream face and in the general vicinity of the conduit, is in very poor condition. The dam embankment should be covered with a good growth of turf and tree as well as brush growth should be removed. However, it is recognized that this would be a major project and consequently, it is urged that attention be centered on that portion of the embankment in the central section of the structure directly over the spillway tube. Here the surface of the embankment is very rough, is sandy and has erosion as well as gulley depressions. This area should be smoothed, loamed, seeded and a good growth of turf promoted.

We have not included herein the comments of the County Hydraulic Engineer regarding the upper dam. From a safety viewpoint, this dam was found to be satisfactory this year though there are minor matters reported previously that should be taken care of. The most serious matter from a safety viewpoint has nothing to do with the safety of the dam but does have to do with the safety of pedestrians walking on the sidewalk along the downstream edge of the embankment. This sidewalk is on a public street. It is apprently heavily travelled and a large portion of a number of the concrete sidewalk sections are seriously undermined and have been undermined for the last two or more years. It would seem proper to make the repairs necessary at this public sidewalk location before the sidewalk slabs fail and some pedestrian becomes injured. If this matter is not under the jurisdiction of your Parks Department, then the attention of the Public Works or the Streets and Engineering Department should be called to this condition.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

Springfield Welding Company Dam

- Springfield

Also see: Dam Report Section - Springfield.

City/Town	Springfield
Dam	Springfield Welding Company Dam
Name	Springfield Welding Company

SPRINGFIELD
D18025

SPRINGFIELD WELDING COMPANY DAM

D18025

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Storms Drop Forging Company Dam

1954 Springfield

Located on a tributary of Poor Brook to the rear of property and southerly of Page Boulevard

Dam	Storms Drop Forging Company Dam
Name	Storms Drop Forging Company
Streets	Page Boulevard
Water	Poor Brook

STORMS DROP FORGING COMPANY

Drop Forgings

Of All Descriptions

70 STORMS COURT
SPRINGFIELD 1, MASSACHUSETTS
TELEPHONE 6-2771

November 30, 1954

Commonwealth of Massachusetts
County of Hampden
Office of the County Commissioners
37 Elm Street
Springfield, Mass.

Gentlemen:

In accordance with the recommendations in your letter of November 24th, this is to advise that we have removed all sticks and debris blocking the overflow well at the dam.

Yours very truly,

STORMS DROP FORGING COMPANY

Earl R. Mohr

Earl R. Mohr, President

n

Copy of this letter mailed to
George H. McDonnell, County Hydraulic Engineer,
on December 2, 1954.

March 13, 1957

Storms Drop Forge Co.
70 Storms Court
Springfield, Mass.

Gentlemen:

In accordance with Chapter 253 of the General Laws of the Commonwealth of Massachusetts, dams within the city of Springfield have been inspected by the County Hydraulic Engineer. In carrying on his inspection work, he has also inspected your dam located on a tributary of Poor Brook to the rear of your property and southerly of Page Blvd.

The following has been taken from the report of the County Hydraulic Engineer to this Board.

> "When last inspected, it was noted that the concrete or the masonry dam itself is becoming quite dilapidated and spalled. If the pond is to be maintained by the Storms Drop Forge Co., they should give consideration to doing necessary maintenance and repair work to the dam. Although the County apparently has no jurisdiction in regard to this structure, it might be advisable to notify the company that it is the advice of the undersigned that repairs should be made to the dam."

We concur in the recommendations of the County Hydraulic Engineer and though your structure is not of a size that places the dam under the jurisdiction of this Board, we are passing on to you the engineering advice for your information and for any action you may desire to take.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

November 24, 1954

StormsDrop Forging Co.
70 Storms Court
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that the small dam located to the rear of your plant and southerly of Page Boulevard, has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"Sticks and debris blocking the overflow well should be cleaned out and removed."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By_____Chairman

_____

_____

Feb. 5, 1958

Storms Drop Forge Co.
70 Storms Court
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dam located within the City of Springfield on a tributary of Poor Brook on your property southerly of Page Boulevard has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "This dam is becoming rather dilapidated and the concrete is becoming disintegrated. The section of the dam directly under the spillway notch should be repaired. Failure of the dam would not cause damage to persons and property downstream because the structure is so small and impounds so little water. The only danger to any person would occur by the masonry wall of the dam actually falling over onto a person standing below the dam. Such a rapid failure is not anticipated. If the pond is to be maintained the owner should give consideration to doing the necessary maintenance and repair work now before the cost of such work becomes greater due to further disintegration. These repairs can only be recommended since the structure is not large enough to come under County jurisdiction and the drainage area involved is less than a square mile."

We are passing on these recommendations of the County Hydraulic Engineer for your information. Though your dam is not of a size that places it under the jurisdiction of this Board, we thought you might wish to have the opinion of our Engineer and his advice for any action you may desire to take.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

_____

_____

_____

Dec. 3, 1958

Storms Drop Forge Co.
70 Storms Court
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dam located within the City of Springfield on a tributary of Poor Brook on your property southerly of Page Boulevard has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

> "This dam is still in the same general dilapidated condition previously reported. The spillway tube shaft is partly blocked with debris. Though this dam does not come under County jurisdiction, it would be well to again notify the owner of the advisability of either repairing the dam or abandoning it."

The above information and recommendations of the County Hydraulic Engineer are herein passed on to you for whatever action you care to take. Your dam does not come under the jurisdiction of this Board, however, the County Engineer looks at the dam each year and we thought you might wish to have the opinion of the Engineer together with his advice in connection with your dam.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

CD, Springfield
April 13, 1964

Green Engineering Affiliates, Inc.
177 Milk Street
Boston 9, Massachusetts

Attention: R. E. Crawford, Vice President

Gentlemen:

The undersigned as County Hydraulic Engineer for the County of Hampden has been directed by the Board of County Commissioners to answer your communication written to the Board and dated February 27, 1964 pertaining to a small concrete dam situated in the valley of Poor Brook just off of Page Boulevard. Though the undersigned has examined this small dam from time to time and has written reports on its condition together with certain recommendations, the dam does not come under County jurisdiction. The drainage area involved is less than a square mile, the height of the dam is less than ten feet and the quantity of water stored is but a small fraction of a million gallons. Consequently, the dam does not come under the provisions of Chapter 253 of the General Laws of Massachusetts.

According to records of the undersigned and County records, the dam is the property of the Storms Drop Forging Company.

It is the opinion of the undersigned that if the owner does not plan any future use for the dam, complete elimination of the structure would probably be the best solution to any problem caused by its presence in connection with your work of stream improvement.

Since the dam does not come under County jurisdiction we have no data, plans or information on the foundation of the dam or its general design.

It is suggested that you work directly with the owner of the structure in either eliminating it from the stream bed or altering it so that it can withstand any future increased run off.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/nam

STORMS DROP FORGING COMPANY

Drop Forgings

Of All Descriptions

70 STORMS COURT
SPRINGFIELD 1, MASSACHUSETTS
TELEPHONE REPUBLIC 6-2771

December 4, 1958

Office of the County Commissioners
County of Hampden
37 Elm Street
Springfield, Mass.

Attention: Mr. Thomas F. Sullivan, Chairman

Gentlemen:

We are in receipt of your letter of December 3 and wish to advise that we are now using the city water supply and have abandoned the dam.

Yours very truly,

STORMS DROP FORGING COMPANY

Earl R. Mohr

Earl R. Mohr, President

n

copy of this letter mailed to George H. McDonnell, County Hydraulic Engineer, on December 5, 1958.

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD, Springfield
April 13, 1964

The Honorable the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Massachusetts

Gentlemen:

In connection with the letter received by your board from Green Engineering Affiliates pertaining to the small dam of the Storms Drop Forging Company located off of Page Boulevard in Springfield, I have written an answer and enclose a copy herewith for your information and files. The contents of the enclosed are self explanatory.

Very truly yours,

G. H. McDonnell
County Hydraulic Engineer

Enc.

GHM/nam

Green Engineering Affiliates, Inc. · ENGINEERS

177 MILK STREET • BOSTON 9, MASS.
Telephone: Liberty 2-5785
(Area Code 617)

February 27, 1964

County Commissioner's Office
Hampden County
37 Elm Street
Springfield, Massachusetts

SUBJ: Proposed Stream Improvements
Poor Brook, Springfield, Massachusetts

Gentlemen:

This office has been retained by the Massachusetts Department of Public Works, Division of Waterways, to design drainage improvements of Poor Brook in Springfield.

Within the limits of this project is a small concrete dam. The dam is located on Poor Brook between Page Boulevard (Route 20-A) and the Boston and Albany Railroad, Athol Branch. The dam is built on property that appears to be owned by Storms Drop Forging Company, 70 Storms Court, Springfield, Mass.

Storms Drop Forging Company does not use the water (approximately 125,000 gallons) stored by this dam, according to Mr. Harold Burtt, Plant Manager, in a letter dated January 21, 1964 to this office.

The "Proposed Stream Improvements" will considerably increase the flows over the dam. These increased flows may endanger the stability of the existing dam. However, this office lacks sufficient data on the construction of the foundation of the dam to determine how stable it will be under design conditions. Any information you can furnish us with reference to the construction and use of the dam would be much appreciated.

This office would also like to consider the complete elimination of the dam. If the pond behind the dam serves no useful purpose then the elimination of this dam would be very desirable.

We would appreciate your opinion and comments with reference to the continuance or elimination of the dam.

Very truly yours,

GREEN ENGINEERING AFFILIATES, INC.

R. E. Crawford

R. E. Crawford
Vice President

REC/bms

xxxxx
Chairman

April 9, 1964

Mr. George H. McDonnell, Consulting Engineer
Eighe & Bond
Holyoke, Massachusetts

Dear Mr. Donnell:

The County Commissioners are enclosing a copy of a letter from Green Engineering Affiliates, Inc., 177 Milk Street, Boston 9, Massachusetts, relative to Poor Brook, City of Springfield.

It would be appreciated if you would reply directly to Green Engineering Affiliates, Inc.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

By_____
Chairman.

WFS:F

Enc.

Water Shops Dam aka Springfield Armory Dam aka U S Armory Water Shop Dam

1926 Springfield

Dam located within the Armory Plant area on Mill River at Allen Street, just behind the building at the main entrance to the Watershops Pond complex as noted 6-12-1967.

Owned by the Federal Government and classified as a Federal Reservation as last noted on 5-25-1967 - formerly owned by the U.S. Armory.

City/Town	Springfield
Dam	U.S. Armory Water Shops Dam
Dam	Springfield Armory Dam
Dam	U S Armory Water Shop Dam
Dam	Water Shops Dam
Name	U S Army Corps of Engineers
Name	U S A
Water	Watershops Pond

February 3, 1926

Col. H. W. Schull,
Springfield Armory,
Springfield, Mass.

Dear Sir:

It has come to the writer's attention that you would like a copy of the report which Engineer James L. Tighe made concerning the dam at the Water Shops Pond belonging to the United States Government.

The following is a copy of that part of our report referring to the dam at Water Shops Pond:

U.S.ARMORY WATER SHOP DAM

This dam belongs to the U. S. Armory and forms Water Shop Pond which has a surface area of three hundred and twenty-eight acres and a drainage area of thirty-three and a half square miles. It is a spillway structure one hundred and six feet in length between abutments and twenty-seven feet in height to the crest of the spillway or thirty feet in height to the top of the abutments.

The dam is built of red sandstone sloped on the upstream side and slightly battered probably two feet from the perpendicular on the downstream side. It is laid on ledge and along its toe the ledge is covered with a log apron to protect it from scour or erosion that might in time undermine the toe of the structure.

The dam appears to be in first-class condition, and judging from the few measurements obtained relative to its section, it has a generous factor of safety. The log apron along the toe is showing some wear and part of it, at least, may soon have to be replaced.

Hoping this gives you the desired information, I am

Yours very truly,
COUNTY COMMISSIONERS

Chairman

GSC/N

All communications should be addressed to "The Commanding Officer"

HWS/mec

SPRINGFIELD ARMORY

IN REPLY, REFER TO

SPRINGFIELD, MASS.

February 4, 1926.

Mr. George S. Cook,
Chairman County Commissioners
County of Hampden,
Springfield, Mass.

My dear Mr. Cook;

This office appreciates the copy of report of Engineer, James L. Tighe, of the condition of the dam at the Water Shops, Springfield Armory contained in your letter dated February 3, 1926.

Yours very sincerely,

H. W. Schull

H. W. SCHULL,
Colonel, Ordnance Department,
Commanding.

JE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
May 25, 1967

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Re: Watershop Pond Dam
Springfield Armory
Springfield, Mass.

Gentlemen:

In reference to the above subject dam, the undersigned on Tuesday, May 16, 1967, received a telephone call from a Mr. Bramer relative to a request for information regarding the dam at Watershop Pond. Apparently, Mr. Bramer represents an organization making a study of the Armory facilities in connection with a proposed use for this property.

I informed Mr. Bramer that the County had little or no information relative to the Watershop Pond dam. Since the dam is the property of the Federal Government and on what is classified as a Federal reservation, the County had no control or jurisdiction over the structure and consequently, plans of the dam, particularly those prepared following the flood of 1955, were not filed with your Board.

According to my records, many years ago a determination had been made by County Counsel that the County of Hampden had no authority in connection with the Watershop Pond Dam.

I have advised Mr. Bramer to either contact the Engineering Division of the Ordinance Department having jurisdiction over Watershop Pond or the Corps of Engineers, New England Division, for any record drawings of the dam. I did point out to Mr. Bramer that if the Federally-owned property is taken over by a Governmental Agency other than the Federal Government or by private interests, the dam would then come under the control of your Board and you would have authority relative to the dam in accordance with Chapter 253 of the General Laws of Massachusetts.

I am submitting the above information to you for file purposes should any question be raised about the request of Mr. Bramer for information on the dam at Watershop Pond.

Very truly yours,

George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM/mbf

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Springfield
June 12, 1967

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Re: Armory Watershops Pond Dam

Gentlemen:

In accordance with your letter of May 24, 1967, and the letter to your Honorable Board from Captain Charles S. Mills, Jr., of the Springfield Armory, the undersigned has conducted an inspection and a review of the drawings of the Watershops Pond Dam, and of the dam itself, and reports as follows.

The dam is located within the Armory Plant area on Mill River at Allen Street just behind the building at the main entrance to the Watershops Pond complex.

The dam is a stone and concrete masonry structure with a Bascule gate on the crest. This gate is of steel construction and is nothing more than a movable flashboard hinged within the masonry of the dam at its lower end. The original dam was a stone masonry structure. Following the flood of August, 1955, repairs were made to the dam by the replacement of the crest with concrete masonry and also against the downstream face and at the toe of the original structure. Prior to the alterations of the dam, the elevation of the overflow crest cap was 153.9. Following completion of the alterations to the dam the revised and rebuilt concrete crest maintained the permanent elevation of 153.9 but water level was controllable to a higher elevation by the Bascule gate which can be raised to a maximum elevation of 156.4.

The undersigned examined the drawings of the dam as rebuilt following the 1955 flood prior to the inspection of the dam itself conducted on the morning of June 5, 1967. Two copies of the plans were made available to the undersigned and these were further reviewed in the office when received via mail on June 9, 1967. A copy of the plans as provided the undersigned are included herewith for County files and records. The drawings are four in number and have a file or key number 71-13-01. They are all dated June, 1956.

The drawings indicate that the dam has been well constructed. From the drawings, it would appear that the existing upstream concrete masonry protective walls will allow for a rise in pond water level to about elevation 160.0 before flooding of adjacent land just above the dam will occur. The undersigned has not conducted a field survey to confirm pond shore wall elevations. However, from the drawings, the concrete masonry wall confining the pond on the left side of the dam appears to be elevation 160.21. I note no elevation for the top of the wall, upstream from the dam on the opposite or right side of the pond. It would appear from the elevation of the top of the abutment to the right of the dam that the top of the wall is in the range of elevation 159.

When the Bascule gate is in a rolled down position there is head available on the dam crest of at least 5 ft. before water will reach the top of the right abutment at elevation 159. A preliminary review of the spillway capacity of this dam would indicate that with the Bascule gate rolled down, the dam can safely pass in the range of 120 cu. ft. per second per square mile of runoff based upon the drainage area of 33.5 square miles.

The dam was noted to be in very good condition when inspected on June 5. The masonry was sound, no cracking or erosion of any importance was noted. The undersigned had personnel at the Armory raise the Bascule gate to its maximum height to stop the overflow of water from the pond. By so doing, the downstream face of the dam was observed. The surface of the masonry was in good condition.

Abutment areas were visually inspected and found to be satisfactory.

The Bascule gate operating mechanism was operated in the presence of the undersigned so as to partially lower the gate and then partially raise the gate. The equipment responded satisfactorily and the gate moved evenly and with no operating problem.

The Bascule gate at present is operated by hand and is rolled downward on occasion to free the crest of collected debris. It is moved from time to time by maintenance personnel to check its operation. Facilities are available to make the gate automatic in operation though at present it is hand operated. With the automatic facilities functioning, the Bascule gate will move in response to fluctuations in water level in the pond.

From my preliminary examination of the dam and equipment, I am of the opinion that the structure is sound and in good condition. No maintenance is required at present other than periodic checking of the Bascule gate equipment and operation of the gate. On occasion the oil storage level in

the pressure tank needs to be adjusted so that its surface is within range of the sight glass. Outside of this routine checking and maintenance of the Bascule gate equipment, the undersigned did not see any other maintenance required at present.

When and if the dam is no longer owned by the Federal Government, the new owner should be required to make frequent checks of the Bascule gate and its operating equipment. It might also be advisable to reactivate the automatic gate control equipment. Also, if the buildings and facilities on both sides of the dam are ever altered or torn down, consideration should be given to the possible maximum flood flow from the drainage area and the related flood elevations of the pond which could occur. Flood flows exceeding the elevation of the top of the pond side walls would still be restrained somewhat at present by the adjacent plant buildings on both sides of the pond at the dam. With the passing of time and further development of the overall stream drainage area, rates of runoff could increase whereby flash type flood flows could occur more frequently than in the past. Properly built and raised flood training or dike walls upstream of the dam to confine the water to the pond and increase the overflow head of the crest, would materially raise the rate of runoff which could safely pass over the crest of the dam.

Any persons or organization acquiring the dam should give consideration to the maximum elevation of ponded water which might occur in time of storm runoff and should take this elevation into account in altering, rebuilding or tearing down buildings and facilities that abut the dam and in connection with land use on the shore of the pond.

Respectfully submitted,

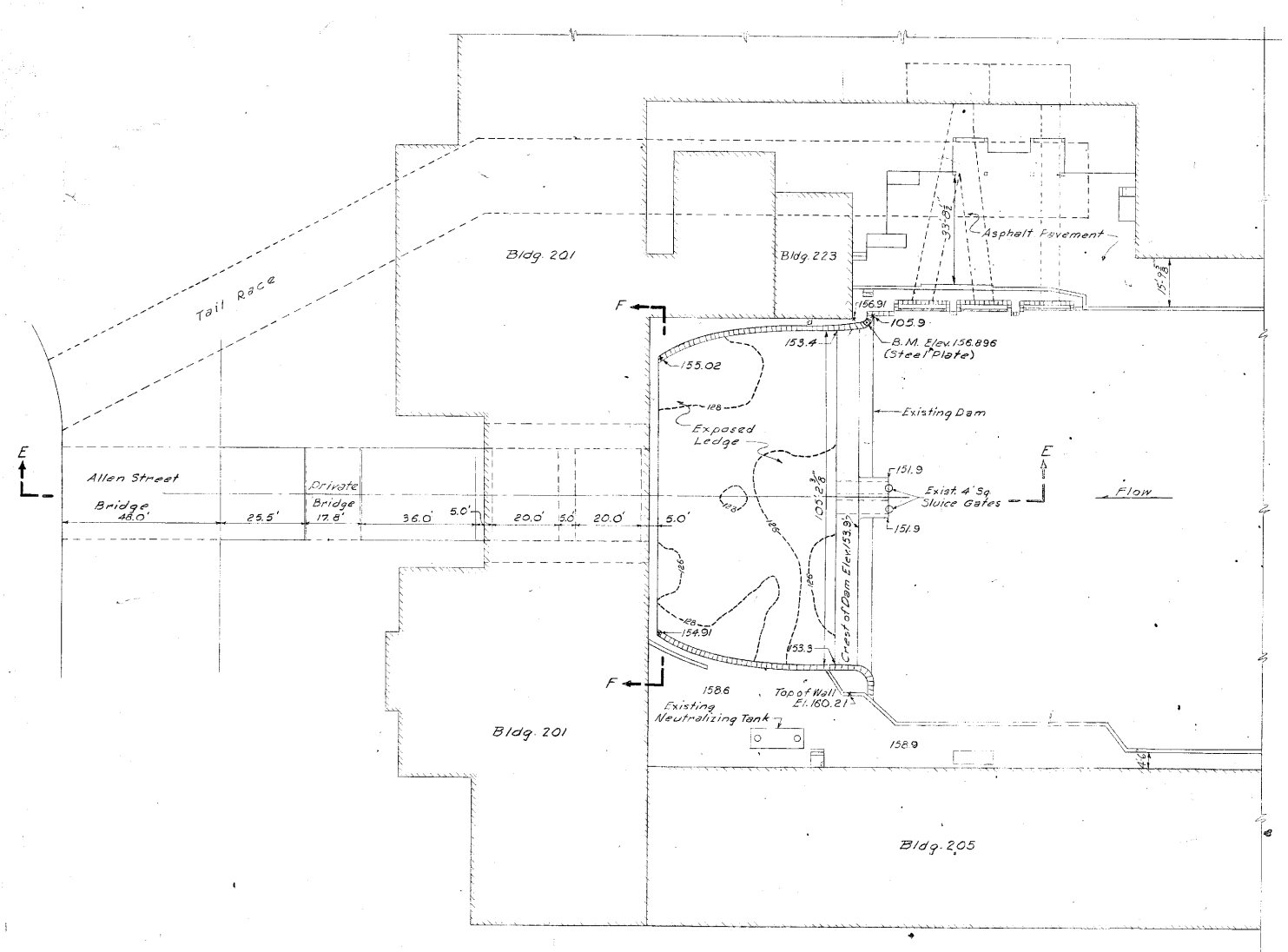
George H. McDonnell

George H. McDonnell
County Hydraulic Engineer

GHM/mbf

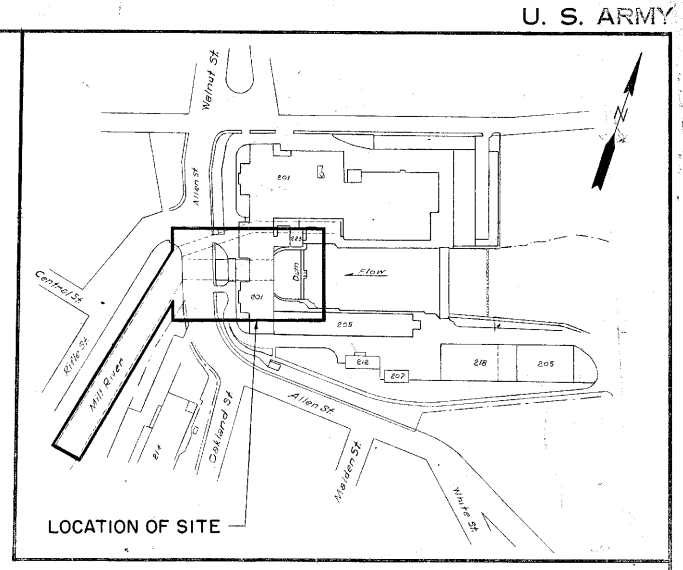
CORPS OF ENGINEERS

U. S. ARMY



EXISTING SITE PLAN

SCALE: 1" = 20' - 0"

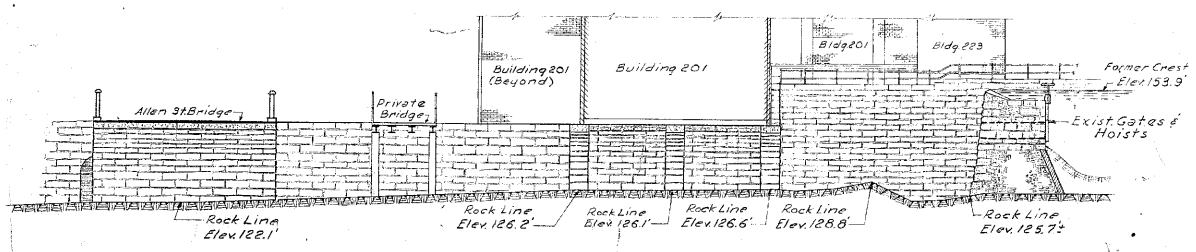


VICINITY MAP

SCALE: 1" = 200' - 0"

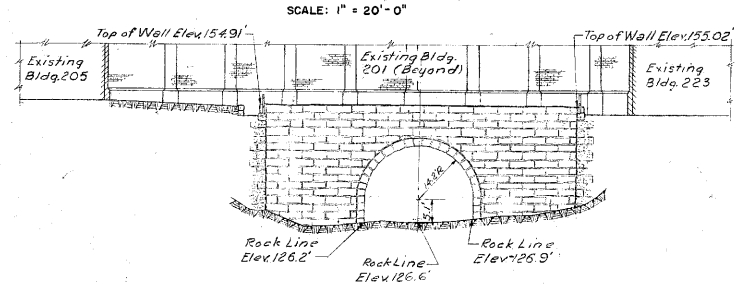
INDEX TO DRAWINGS		
Dwg No.	Sheet No.	Title
71-13-01	1 of 4	Site Plan & Index
71-13-01	2 of 4	Plan Elevation & Details
71-13-01	3 of 4	Sections
71-13-01	4 of 4	Control House Plans & Details

NOTES:
1. Elevations Refer to Mean Sea Level Datum
2. This Drawing Shows Existing Conditions at the Site. For Work Included Under This Contract See Sheets No. 2, 3 & 4.



SECTION E - E

SCALE: 1" = 20' - 0"



SECTION F - F

SCALE: 1" = 20' - 0"

4654

REVISION	DATE	DESCRIPTION	BY

ALONZO B. REED
INCORPORATED
ARCHITECTS – ENGINEERS
88 BROAD STREET, BOSTON 10, MASS.

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION
BOSTON, MASS.

DRAWN BY: AEP
TRACED BY:
CHECKED BY: E.A.H.
SUBMITTED:
APPROVED: CHIEF, ENGINEERING DIVISION
APPROVED: COLE & ASST. DIVISION ENGINEER
DATE: JUNE 1956

SPRINGFIELD ARMORY

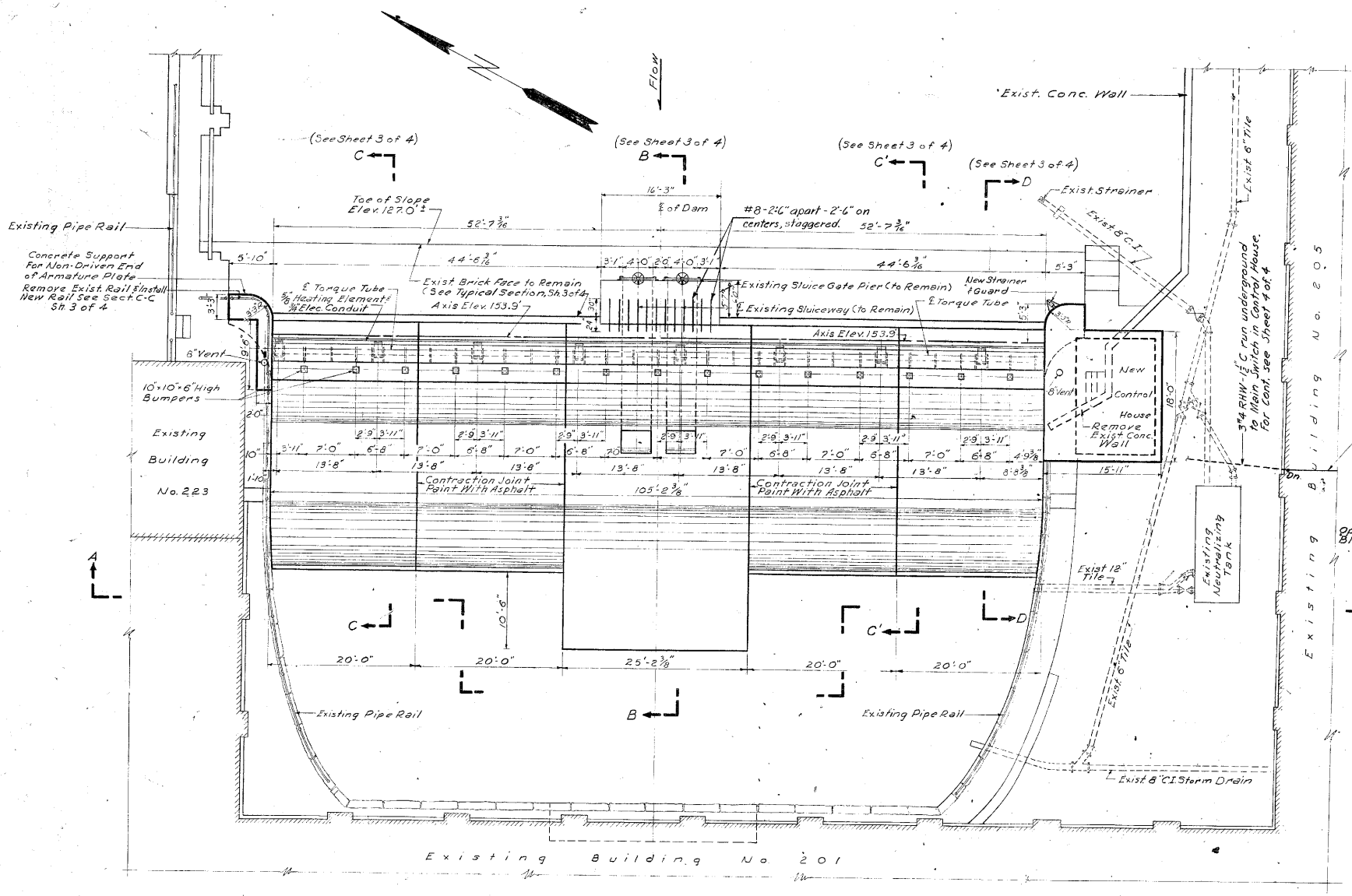
SPRINGFIELD, MASS.

REPAIR TO WATER SHOPS DAM

SITE PLAN & INDEX

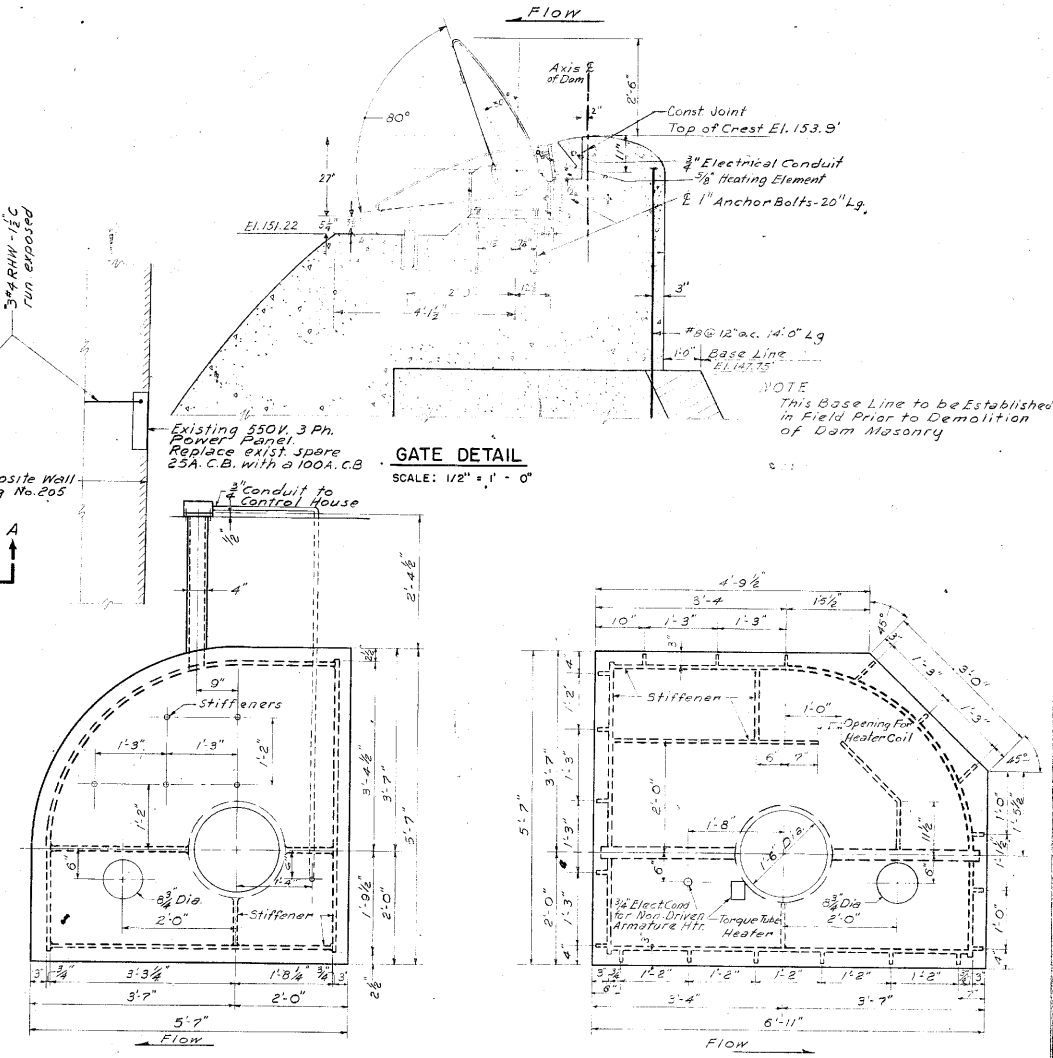
SCALE: AS NOTED
SPEC. NO. 19-016-56-183

DRAWING NUMBER
71 – 13 – 01
SHEET 1 OF 4



PLAN

SCALE: 1/8" = 1'-0"



GATE DETAIL

SCALE: 1/2" = 1'-0"

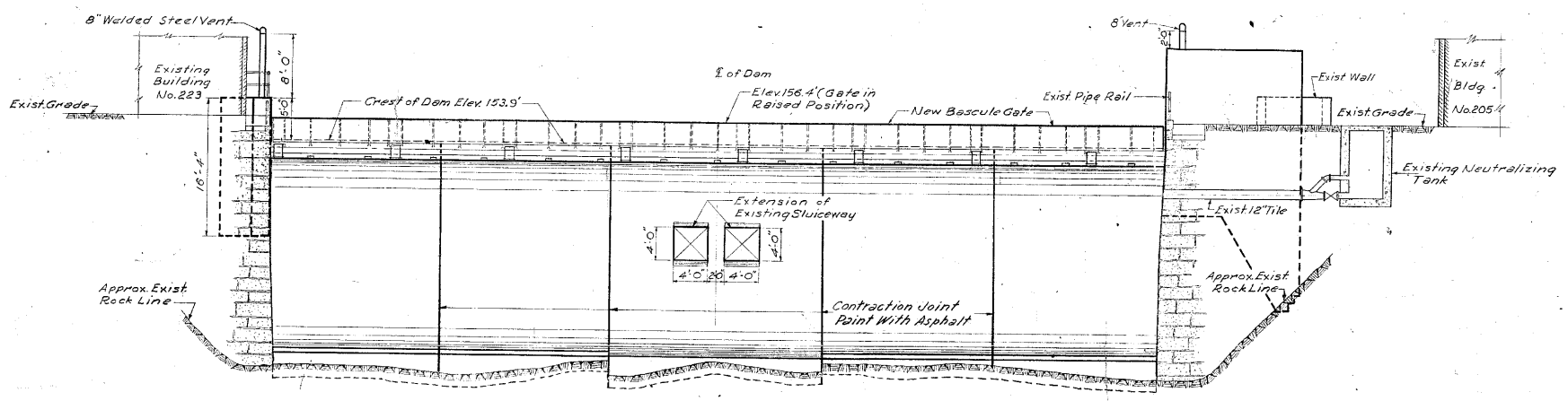
ARMATURE PLATE NON-DRIVEN END

SCALE: 3/4" = 1'-0"

ARMATURE PLATE DRIVEN END

SCALE: 3/4" = 1'-0"

NOTE:
All Dimensions of Existing Structures are Subject to Verification in the Field.



SECTIONAL ELEVATION "A-A"

SCALE: 1/8" = 1'-0"

4654

REVISION	DATE	DESCRIPTION	BY
	Jan. 58	Final Field Corrections	
	11-14-57	Not authorized by Rev. No. 2 completed by Sep. P.O. #58-M-393	

ALONZO B. REED
INCORPORATED
ARCHITECTS — ENGINEERS
88 BROAD STREET, BOSTON 10, MASS.

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION
BOSTON, MASS.

DRAWN BY: A.E.P.
TRACED BY:
CHECKED BY: E.A.H.
SUBMITTED:
APPROVED: CHIEF, ENGINEERING DIVISION
APPROVED: COL., C.E., ASST. DIVISION ENGINEER
DATE: JUNE 1956

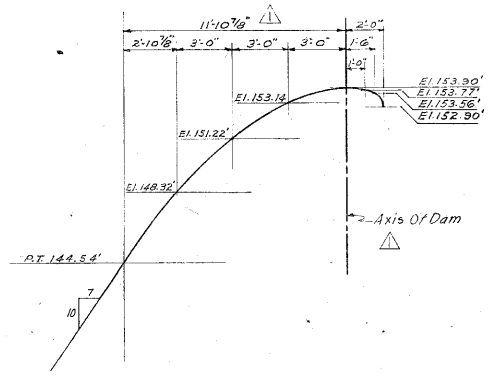
SPRINGFIELD ARMORY

SPRINGFIELD, MASS.

REPAIR TO WATER SHOPS DAM

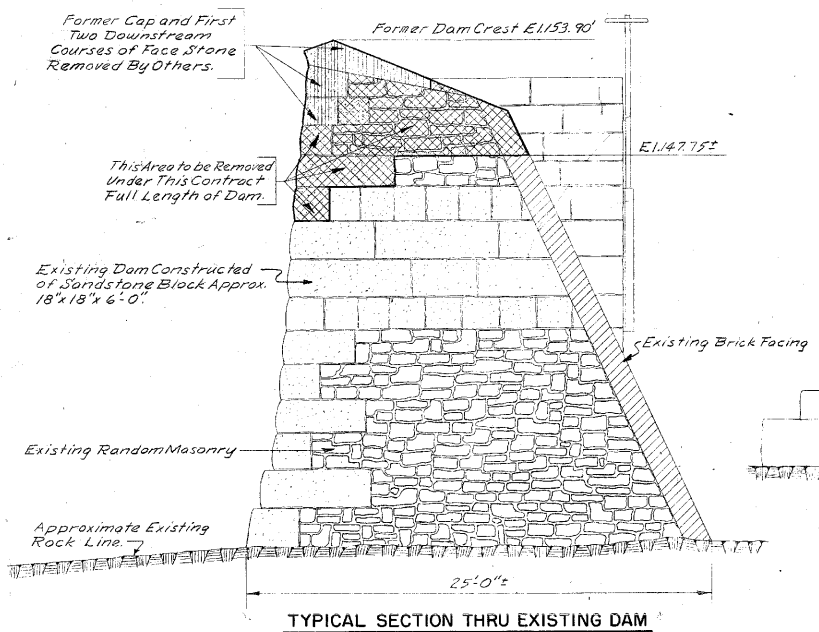
PLAN, ELEVATION & DETAIL

SCALE: AS NOTED
SPEC. NO. 19-016-56-183
DRAWING NUMBER 71-13-01
SHEET 2 OF 4



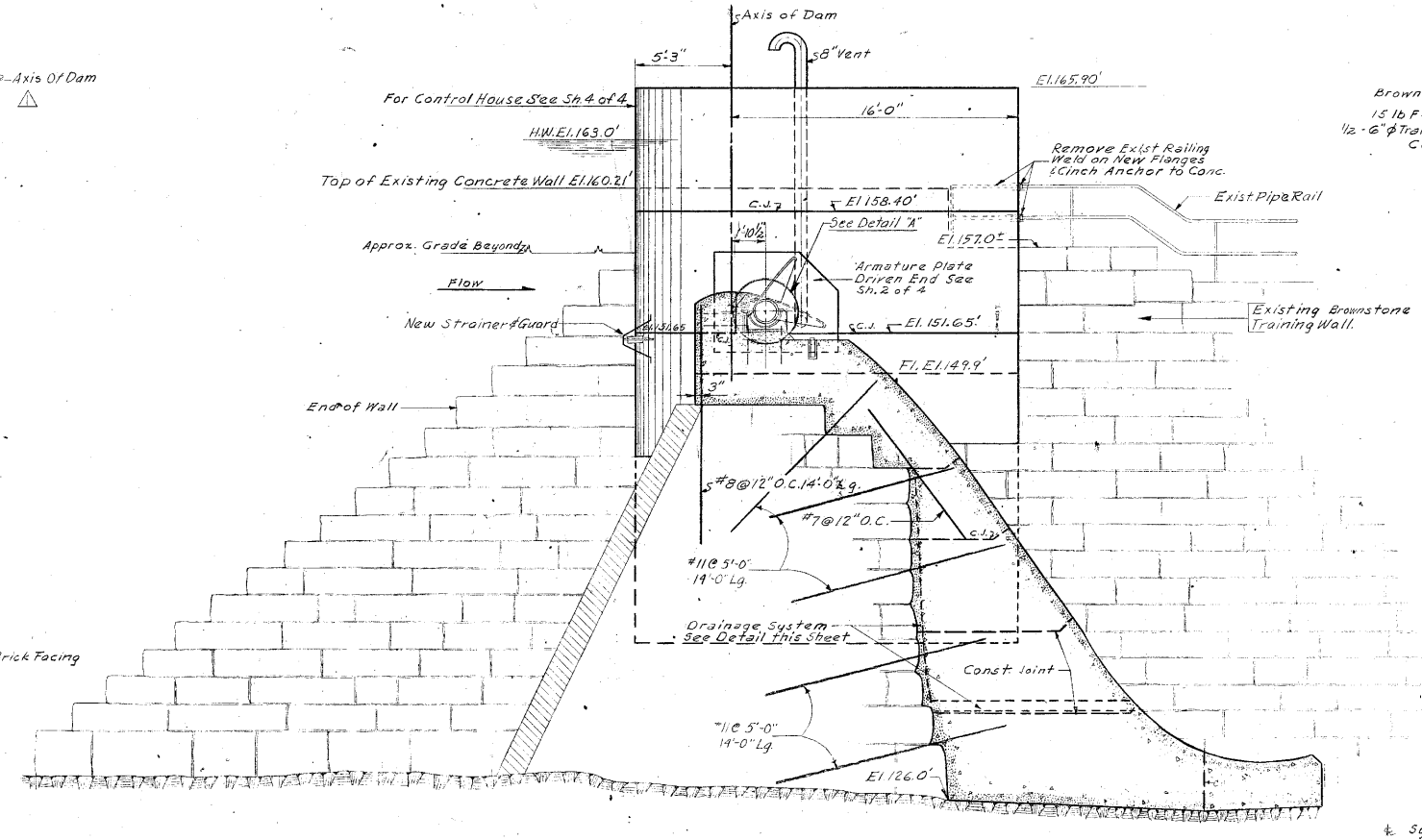
CURVE DATA

SCALE: 1/4" = 1' - 0"



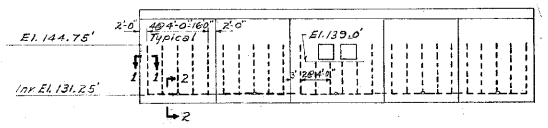
TYPICAL SECTION THRU EXISTING DAM

SCALE: 1/4" = 1' - 0"



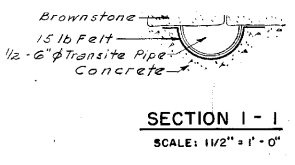
SECTION D - D

SCALE: 1/4" = 1' - 0"



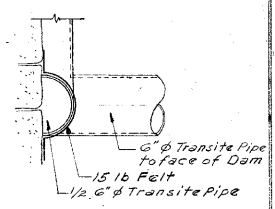
ELEVATION OF DAM

SCALE: 1" = 20' - 0"



SECTION 1 - 1

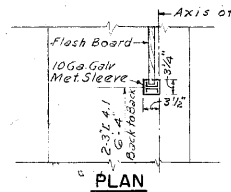
SCALE: 1 1/2" = 1' - 0"



SECTION 2 - 2

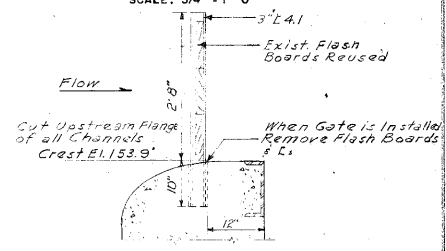
SCALE: 1 1/2" = 1' - 0"

DRAINAGE SYSTEM DETAILS



PLAN

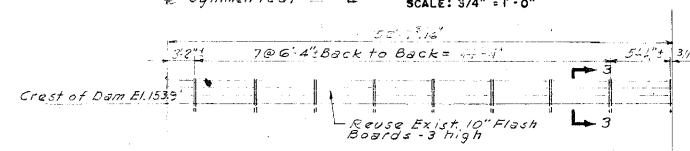
SCALE: 3/4" = 1' - 0"



SECTION 3 - 3

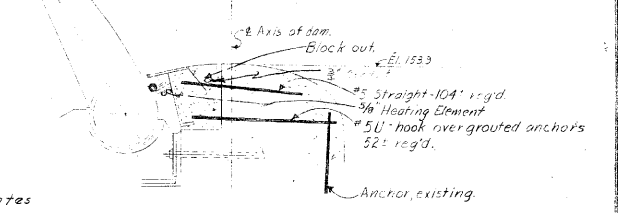
SCALE: 3/4" = 1' - 0"

℄ Symmetrical



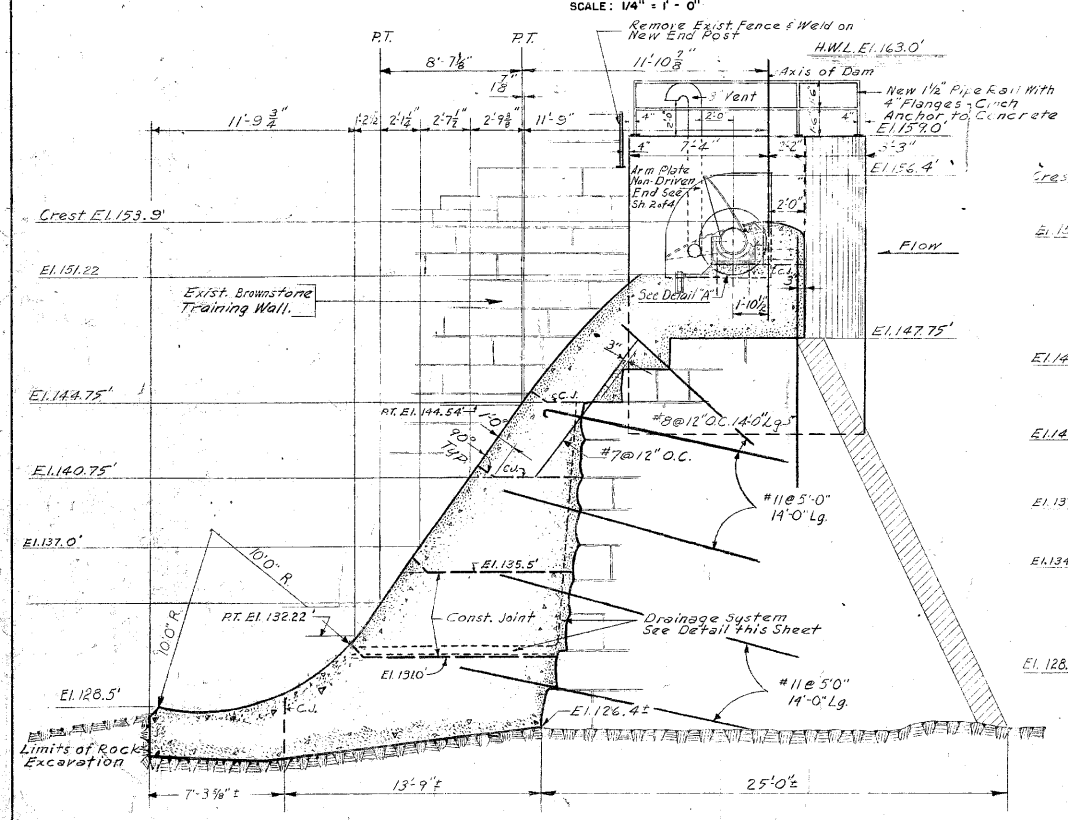
ELEVATION

SCALE: 1/8" = 1' - 0"



DETAIL "A"

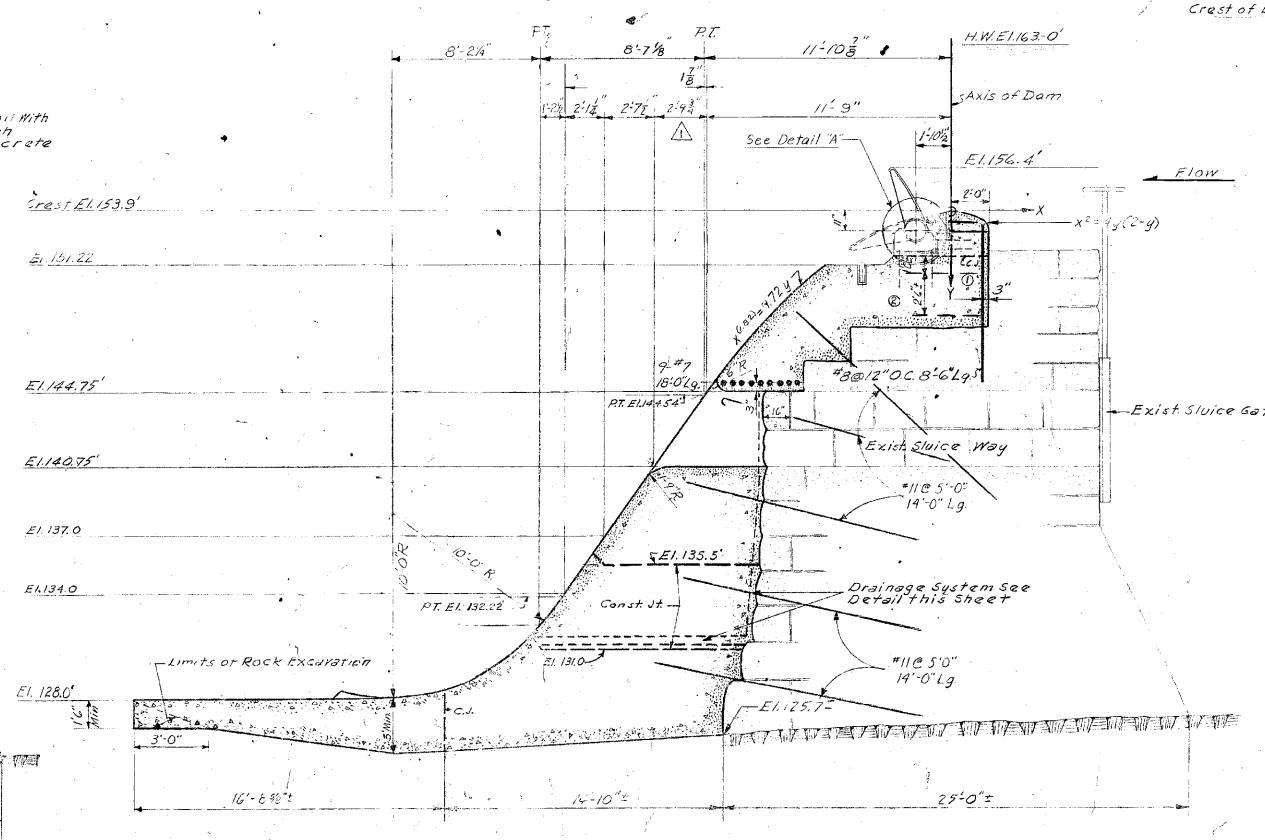
NOT TO SCALE



SECTION C - C

SCALE: 1/4" = 1' - 0"

SECTION C' - C' SIMILAR



SECTION B - B'

SCALE: 1/4" = 1' - 0"

4654

REVISION	DATE	DESCRIPTION	BY
	Jan. 58	Final Field Corrections	
	11-14-57	Work within ⚠1 by Rev. No. 2 completed by sep. P.O. #58-M-393	
⚠1	6-25-56	Note added, Dims. changed. (Add #1)	

ALONZO B. REED
INCORPORATED
ARCHITECTS – ENGINEERS
88 BROAD STREET, BOSTON 10, MASS.

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION
BOSTON, MASS.

DRAWN BY G.A.R.
TRACED BY
CHECKED BY
SUBMITTED
APPROVED CHIEF, ENGINEERING DIVISION
APPROVED COL. C.E., ASST. DIVISION ENGINEER

SPRINGFIELD ARMORY

SPRINGFIELD, MASS.

REPAIR TO WATER SHOPS DAM

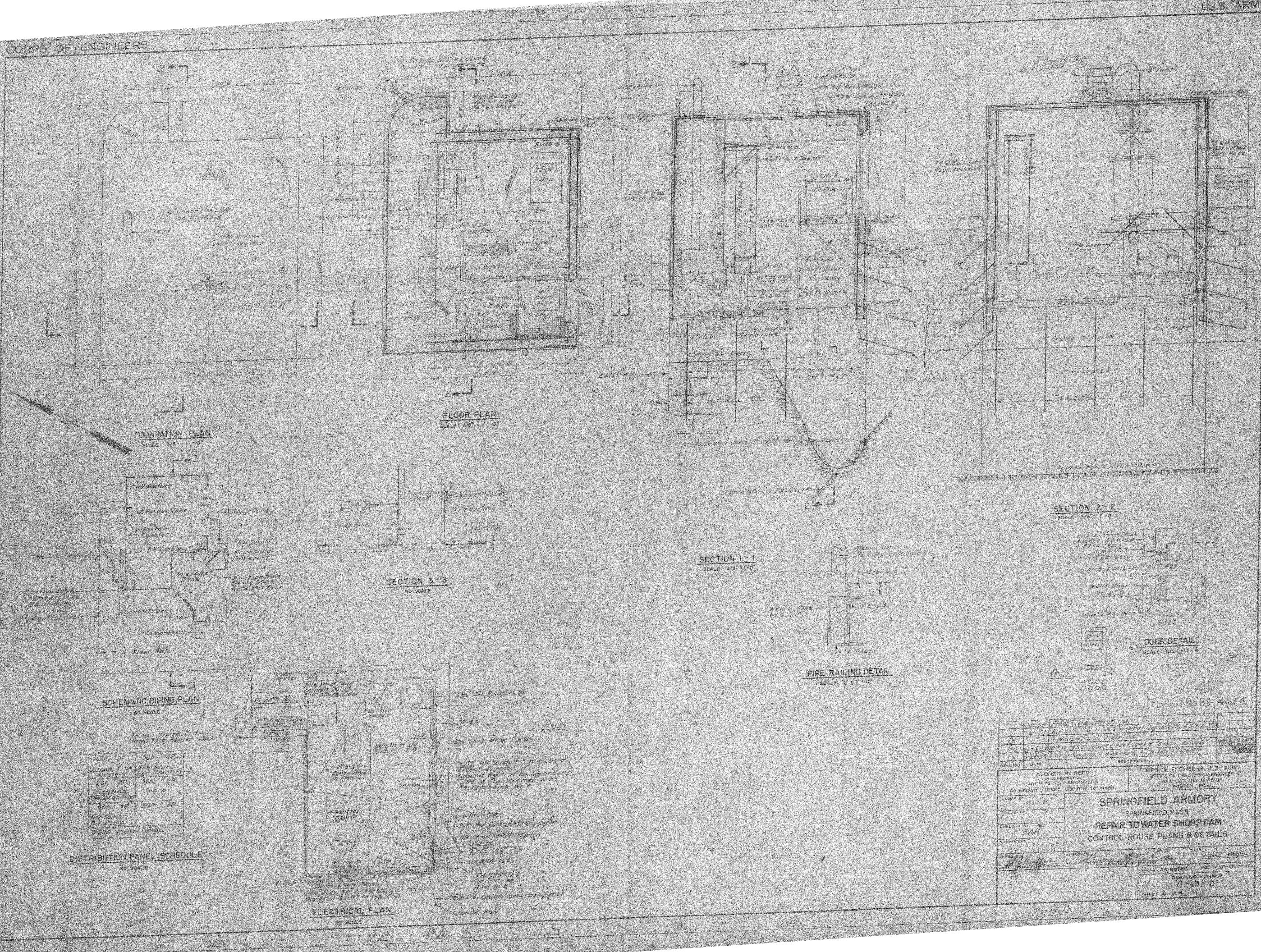
SECTIONS

DATE JUNE 1956

SCALE AS NOTED SPEC. NO. 19-016-56-183

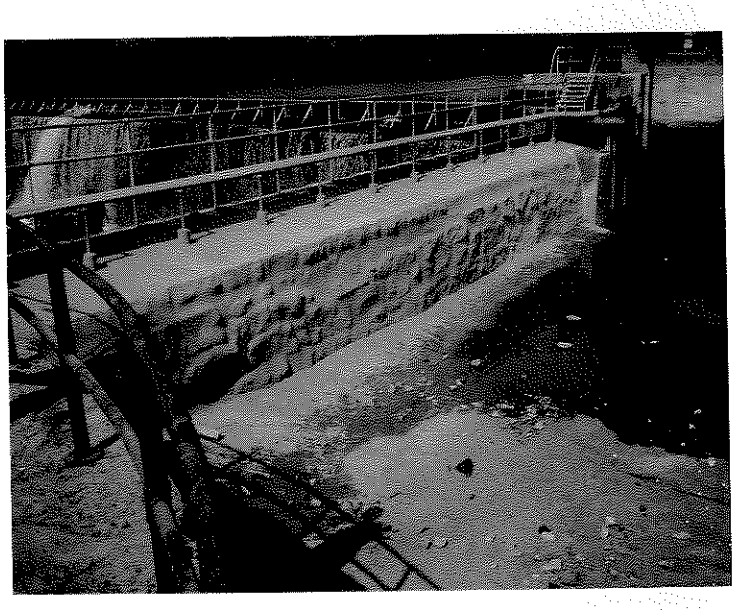
DRAWING NUMBER 71-13-01

SHEET 3 OF 4


FOUNDATION PLAN
FLOOR PLAN
SECTION 1-1
SECTION 2-2
SECTION 3-3
PIPE RAILING DETAIL
DOOR DETAIL
SCHEMATIC PIPING PLAN
DISTRIBUTION PANEL SCHEDULE
ELECTRICAL PLAN
SPRINGFIELD ARMORY
SPRINGFIELD, MASS.
REPAIR TO WATER SHOPS DAM
CONTROL HOUSE PLANS & DETAILS
JUNE 1909

July 6, 1965

Side view of spillway wall on inside of canal. Preparing rubble stone wall for gunite.



Side view of spillway wall on inside of canal. Wall after applying 2 to 3 inches of gunite.

Front view of spillway wall on inside of canal. Wall after applying 2 to 3 inches of gunite.

Western Massachusetts Electric Company Dam

1964 Springfield

Dam located on Chicopee River at Indian Orchard just upstream from the West Street Bridge connecting Ludlow with Indian Orchard. Also see Dams in Ludlow

Bridges	West Street Bridge
City/Town	Springfield
Dam	Western Massachusetts Electric Company Dam
Streets	West Street
Water	Chicopee River

WESTERN MASSACHUSETTS ELECTRIC COMPANY

July 20, 1965

MEMO TO: Mr. R. D. Purrington

FROM: Mr. Leslie W. Noyes, Jr.

This is a report of conditions found during the repair of the gate house spillway wall and inspection of Indian Orchard Station Canal.

1 - On July 5, 1965, the canal was unwatered for guniting of the gate house spillway wall. At this time, an inspection was made of the entire canal, with the following areas of comment -

a) Gate house gates No. 3 and No. 7 need bottom log replaced.

b) The south side of canal wall about 30 feet from gate house showed seeping, apparently water leaking by gate house.

c) Concrete floor poured against spillway wall had a 2 inch opening in the center, showing a possible movement of spillway wall.

d) Large crack located behind the canal drain gate face and extending upward toward the northwest corner of the gate house was found.

e) Both north and south canal walls, extending from gate house to canal sluice gate, appeared in good condition.

f) Numbers 1, 2, 3 and 4 machine racks appeared in good condition.

g) Sluice gate had a bent sealing edge.

-Continued-

h) Inspected No. 3 generator water wheel and found wickets and runner in good condition.

i) Inspected No. 4 generator water wheel and found a 30 inch section of the seal ring between the draft tube and scroll case missing. Wickets and runner in good condition.

2 - The spillway wall at the gate house is about 85 feet long by 7½ to 8 feet high. It has a brown stone face with mortared joints on the canal face and a granite stone cap. All of the loose mortar was removed and the entire surface was sandblasted before applying 3 to 4 inches of gunite, extending from the concrete canal bottom to the granite stone cap. 20 feet of the north canal wall, joining the spillway wall, was also given 3 to 4 inches of gunite.

3 - The large crack behind the drain gate face was cleaned and two 3/4 inch re-enforcing rods were pinned into the surface and covered with gunite.

4 - The sluice gate sealing edge was repaired.

5 - The canal was watered up on July 15, 1965, at 10:00 AM, with no leaks through the spillway wall.

The enclosed pictures show the condition of the canal spillway wall, on the inside, before and after guniting.

LWNJr.

LWN/d
Encl.

Western Mass. Electric Co.

ADDRESS REPLY TO

174 Brush Hill Avenue
West Springfield, Mass. 01089

January 11, 1966

Board of County Commissioners
County of Hampden
52 State Street
Springfield, Massachusetts

Gentlemen:

This will acknowledge your letter of December 8, 1965 relating to certain suggested maintenance work on the outside face of our canal wall just downstream of our dam located in Indian Orchard.

During July 1965 an amount of gunite was applied to the inside face of said canal wall which we believe has arrested the condition outlined by the Commissiners' engineer.

May we have permission to contact Mr. McDonnell and discuss this matter with him?

Very truly yours,

J. P. McMahon, Jr.

J. P. McMahon, Jr.
Manager of Real Estate

JPM:mn

1/13/66 Telephoned Mr McMahon

Calf McMahon

Western Mass. Electric Co.

ADDRESS REPLY TO

174 Brush Hill Avenue
West Springfield, Mass. 01089

January 18, 1966

Board of County Commissioners
County of Hampden
52 State Street
Springfield, Massachusetts

Gentlemen:

Kindly refer to your letter of December 8, 1965, in respect to certain suggested maintenance work on the outside face of our canal wall just downstream of our dam located in Indian Orchard.

Our Mr. Noyes, Superintendent of Hydro Stations and Supervisor of Controls and Electric Maintenance, discussed with Mr. McDonald of Tighe & Bond on January 17, 1966, the nature of work done by us during July, 1965. It is understood that Mr. McDonald is now satisfied.

Enclosed herewith, for your records, is a copy of Mr. Noyes' letter of July 20, 1965, along with pictures showing the condition of the canal spillway wall, on the inside, before and after guniting.

We trust that the work completed, in preventing further disintegration of the face of the stone masonry wall, which was referred to in your letter of December 8, 1965, meets with your approval.

Very truly yours,

Milton L. Mead

Milton L. Mead
System Right of Way Agent

MLM:lga
Enc.

WAW RDP file

WESTERN MASSACHUSETTS ELECTRIC COMPANY

January 18, 1966

MEMO TO: R. D. Purrington

FROM: L. W. Noyes, Jr.

This is to inform you of the status of our Indian Orchard Station dam in regards to the County Commissioner's letter of December 8, 1965.

At the suggestion of Mr. Milton L. Mead, on January 17, 1966, I contacted Mr. McDonald of Tighe and Bond, 211 Bowers Street, Holyoke, Massachusetts, as to the type of repair work done to our structure, during July 1965. After explaining, in detail, the nature of the work done at this time, to Mr. McDonald, he was apparently satisfied with the preliminary steps we have taken, in preventing further disintegration of the face of this stone masonry wall, which was referred to in the County Commissioner's letter of December 8, 1965.

I suggested, to Mr. Milton L. Mead, that he forward the three colored snapshots, of this work area, to the County Commissioner.

I am sending a set of black and white snapshots to Mr. Joseph P. McMahon for his records.

Les

LWN/d
cc: J. P. McMahon, Jr.

xxxxxxxxxx
52 State St.

January 26, 1966

Mr. George H. McDonnell
County Hydraulic Engineer
Tighe & Bond
Holyoke, Massachusetts

Dear Mr. McDonnell:

There is enclosed for your information, copy of a letter from the Western Mass. Electric Company, together with a copy of a memo from Mr. K.D.Purrington to Mr. Leslie W. Noyes, Jr.

If you care to see the pictures referred to, they are on file in this office.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

By_____
Chairman.

TFS:F

Enc.

January 26, 1966

Western Massachusetts Electric Company
Main Office
Brush Hill Avenue
West Springfield, Massachusetts

Att: Dam and Hydraulic Maintenance Section

Gentlemen:

Our Board has received a report from the County Hydraulic Engineer relative to progress made to date on repair work at the canal wall adjacent to your dam located on Chicopee River at Indian Orchard just upstream from the West Street Bridge connecting Ludlow with Indian Orchard. Our Board sent your office a communication dated December 8, 1965 and recommended that repairs should be made to the wall in order to prevent further deterioration.

The County Hydraulic Engineer reports that recently you drew down the canal, examined the canal face of the wall, made repairs to joints in the block masonry, and then sealed the face of the wall with gunite. The gunite construction has been carried down to the concrete floor of the canal.

The work accomplished to date should greatly reduce, and might even stop, seepage of canal water thru the wall. If this is accomplished, your next step in the work will be to patch the dry face of the wall as necessary. This latter phase of the work would probably be done during the Summer of 1966.

Since the County Hydraulic Engineer was not informed of the work when it was in progress, his report to our Board is based upon information provided to him by personnel of your Company. It is also the understanding of this Board that a copy of the report on the work, as prepared by your personnel, will be sent to our office for file purposes.

Based upon the information reported to us by the County Hydraulic Engineer, the work as completed to date is acceptable to this Board. It is recommended

that the work be completed in the Summer of 1966 if seepage of canal water thru the wall has now been controlled. If seepage does still exist, then other steps should be taken so that repair work of an acceptable nature can be accomplished this year.

If you have any question in connection with this matter, please call or write this office or contact the County Hydraulic Engineer, George H. McDonnell at 533-3991.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

_____

_____

_____

End of Book D18~ Dams ~ Springfield